

Personality, Authenticity, Risk-taking, and Quality of Life in Adaptive DBS Trial Participants

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BACKGROUND

- There has been substantial debate in the neuroethics literature surrounding the extent to which deep brain stimulation (DBS) impacts personality and identity.
- However, there are few empirical data that can speak to these claims, and the scarce empirical research that has been conducted on these topics has yielded mixed findings.
- The **current study** systematically examined changes in dimensions of the self that are commonly discussed in the neuroethics literature: personality, authenticity, and risk-taking. We also examined changes in quality of life to gain insight into how DBS, as well as any reported changes to personality and self may influence overall life satisfaction.

METHOD

Participants

Participants (n=19) were recruited from five aDBS trials inclusive of several diagnoses (i.e., dystonia, Tourette's syndrome, essential tremor, obsessive-compulsive disorder, and Parkinson's disease)

Table 1. Demographic Information

Gender	Male: 11 (58%) Female: 8 (42%)
Age	Mean: 50 (Range: 24-72)
Race	White: 15 (79%) Asian: 1 (5%) Other: 3 (16%)
Ethnicity	Latinx: 4 (21%) Non-Latinx: 14 (74%) Did not respond: 1 (5%)
Condition	Dystonia: 1 (5%) Tourette's syndrome: 2 (11%) Essential tremor: 3 (16%) Obsessive-compulsive disorder: 5 (26%) Parkinson's disease: 8 (42%)

Measures and Procedure

Procedure

Each participant completed a battery of questionnaires to assess personality, authenticity, risk-taking, and quality of life prior to DBS surgery and 6-months post-DBS surgery.

Personality (Mini-IPIP)

The Mini-IPIP is a 20-item inventory that assess the Big Five domains of personality (i.e., intellect/imagination or openness, conscientiousness, extraversion, agreeableness, and neuroticism). Items are rated on a five-point Likert scale, ranging from 1 ("Very inaccurate") to 5 ("Very accurate"). Items corresponding to each respective subscale are then summed by domain, with greater numbers indicating higher levels of that personality dimension.

Authenticity (Authenticity Scale)

The Authenticity Scale (AS) is a 12-item self-report measure designed to assess three dimensions of authenticity including: authentic living, accepting external influence, and self-alienation. Individual items are rated using a seven-point Likert scale ranging from 1 ("Does not describe me at all") to 7 ("Describes me very well"). Items are summed in their respective subscales, with greater numbers indicating greater levels of that dimension of authenticity.

Risk-taking (DOSPRT-30)

The DOSPERT is a 30-item inventory that assesses five domains of risk-taking behavior including ethical, financial, health and safety, recreational, and social risk-taking. Items are rated on a seven-point Likert scale from 1 ("Extremely unlikely") to 7 ("Extremely likely"). Individual items are then summed for each subscale, with higher numbers indicating greater propensity for risk-taking in each respective domain.

Quality of life (Q-LES-Q-SF)

The Q-LES-Q-SF is a 14-item inventory that assesses life enjoyment and satisfaction. Items are rated on a five-point Likert scale from 1 ("Very poor") to 5 ("Very good"). Quality of life scores are computed by summing the first 14 items.

RESULTS

Personality: There were no significant changes with respect personality, with the exception of a *significant decrease in neuroticism* from pre-DBS ($M = 10.63$, $SD = 3.35$) to post-DBS ($M = 9.21$, $SD = 2.97$), $t(18) = -2.37$, $p = .029$, Hedge's $g = -.53$.

Authenticity: There were no significant changes in any dimension of authenticity.

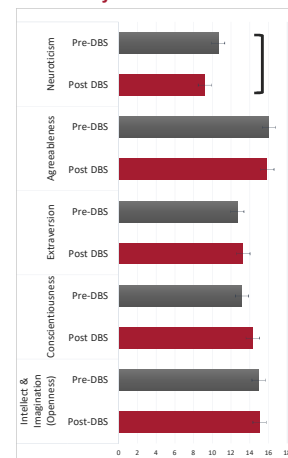
Risk-taking: There was a *marginally significant increase in ethical risk-taking* from pre-DBS ($M = 8.47$, $SD = 2.11$) to post-DBS ($M = 10.26$, $SD = 3.53$), $t(18) = 2.14$, $p = .046$, Hedge's $g = .48$, as well as *risk-taking related to one's health and safety* from pre-DBS ($M = 14.32$, $SD = 5.61$) to post-DBS ($M = 16.26$, $SD = 6.99$), $t(18) = 2.19$, $p = .042$, Hedge's $g = .49$. However, it is important to note that the post-DBS scores were still indicative of low levels of risk-taking.

Quality of life: There was a *significant increase in QoL* from pre- ($M = 46.53$, $SD = 11.56$) to post-DBS ($M = 53.42$, $SD = 9.01$), $t(18) = 3.17$, $p = .005$, Hedge's $g = .71$.

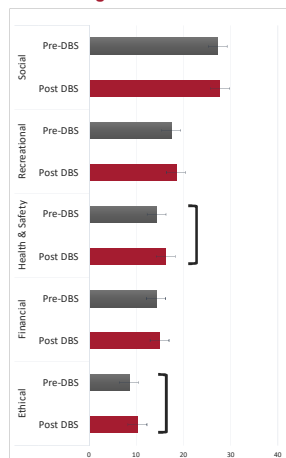
RESULTS, CONT.

Pre- and Post-DBS Average Scores by Dimension

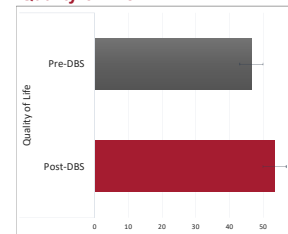
Personality



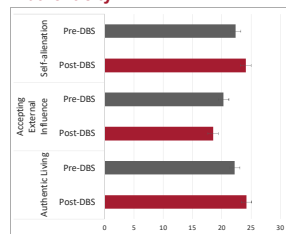
Risk-taking



Quality of Life



Authenticity



CONCLUSION

These findings illustrate that DBS had a positive influence on QoL and a smaller impact on other domains; particularly a mild improvement in neuroticism and a slight increase in risk taking. Though significant worsening was not encountered, DBS studies with larger sample sizes will be necessary to confirm these results.

- Acknowledgments:** We gratefully acknowledge the support of the National Institute of Mental Health, Award Number R01MH114854.
- Disclosures:** None.