

Supplementary Table 1: Descriptive statistics for ‘High’ and ‘Low’ clusters of caregiver-rated variables identified in the frequentist analysis

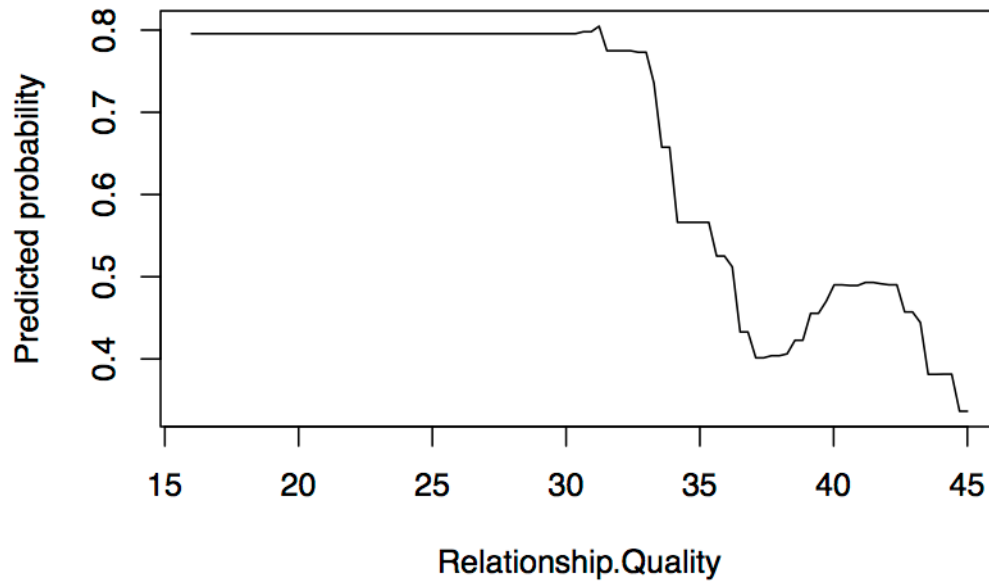
| Caregiver-Rated Variable | ‘High’ Cluster Mean (SD) | ‘Low’ Cluster Mean (SD) | Difference in Means (95% Confidence Interval) | Significance |
|-------------------------------------|--------------------------|-------------------------|---|--|
| Zarit Burden Interview (ZBI) | 31.09 (7.04) | 10.83 (5.88) | 17.03-23.49 | p = 2.2x10 ⁻¹⁶ *** t = 12.54 |
| Caregiver-Rated Impulsiveness (BIS) | 71.17 (6.30) | 54.92 (6.65) | 12.9-19.5 | p = 1.3x10 ⁻¹³ *** t = 9.85 |
| Caregiver-Rated Empathy (EQ) | 48.29 (6.26) | 27.03 (8.12) | 17.66-24.86 | p = 2.2x10 ⁻¹⁶ *** t = 11.81 |

Significance codes: ‘***’ p<0.001 ‘**’ p<0.01 ‘*’ p<0.05

Supplementary Table 2: Levodopa Equivalent Daily Dose (LEDD) at each time point

| Time Point | LEDD Mean (SD) | LEDD Median (Range) |
|-------------------|----------------|---------------------|
| Pre-DBS | 1066 (±551.8) | 1000 (0 – 3450) |
| 2-weeks post-DBS | 416 (±243.5) | 400 (0 -1210) |
| 6-weeks post-DBS | 388 (±251.1) | 375 (0 – 1463) |
| 13-weeks post-DBS | 346 (±217.1) | 346 (0 – 950) |
| 26-weeks post-DBS | 346 (±208) | 345 (0 – 1000) |

Supplementary Figure 1



Supplementary Figure 1 Legend:

Likelihood of assignment to the higher burden (ZBI) cluster based on relationship quality (RQI score). Above a certain threshold, assignment to the higher and lower ZBI clusters is of approximately equal likelihood. However, below this threshold, caregivers were far more likely to be assigned to the higher ZBI cluster.