Outcome Measure	**Frontal Systems Behavior Scale (FrSBe)**
Sensitivity to Change	Emerging evidence: Yes
Population	Adult
How to obtain	**Available from PAR:** https://www.parinc.com/Products/Pkey/116#:~:text=The%20FrSBe%20fills%20a%20gap,may%20be%20targeted%20for%20treatment.
Domain	Behavioural Function
Type of Measure	Informant or self-report scale
Time to administer	**10 minutes**
Description	The FrSBe is designed to measure changes in behavior as a consequence of frontal systems dysfunction. The FrSBe is a 46-item rating scale, with three subscales: Apathy (14 items), Disinhibition (15 items) and Executive dysfunction (17 items). Item content of the Apathy scale samples "problems with initiation, psychomotor retardation, spontaneity, drive, persistence, loss of energy and interest, lack of concern about self/care, and/or blunted affective expression". The Disinhibition subscale items assess problems with inhibitory control of actions and emotions, including impulsivity, hyperactivity, social inappropriateness, emotional liability, explosiveness, irritability. Problem areas addressed in the Executive dysfunction subscale include "sustained attention, working memory, organization, planning, future orientation, sequencing, problem solving, insight, mental flexibility, self-monitoring of ongoing behavior, and/or the ability to benefit from feedback or modify behavior following errors. The Self-rating and Family forms have identical items, phrased as appropriate. Administration time is approximately 10 minutes. Items are rated in a 5-point scale: 1 (almost never), 2 (seldom), 3 (sometimes), 4 (frequently), 5 (almost always). Four scores are obtained: Total, Apathy, Disinhibition and Executive. Scores greater than T = 65 are considered clinically significant.
Properties	See Tate (2010) for full details. <u>Construct validity:</u> Grace & Malloy (2001) used the standardization sample recruited from community and volunteer organisations in the New England states of the USA to determine the internal consistency of the FrSBe. Family form - Total: α = .92 (Apathy: .78, Disinhibition: .80, Executive: .97), Self-Form - Total: α = .88 (Apathy: .72, Disinhibition: .75, Executive: .79) Stout, Ready, Grace, Malloy, and Paulsen (2003) examined the factor structure of the Family ratings in a mixed neurological sample (*n*=324). Principal component analysis, specifying a three-factor solution, extracted three components accounting for 41% of the variance: Executive dysfunction (14 items), Disinhibition (9 items) and Apathy (10 items). Grace, Stout, and Malloy (1999) used the FLOPS (Family ratings) with 24 patients with frontal lesions from a range of neurological disorders, 15 patients with stroke resulting in nonfrontal lesions verified neuroradiologically, and 48 healthy controls to determine discriminant validity. AFTER ratings (i.e., assessing current levels of functioning) were used. Frontal group M = 123.23 (SD = 26.98) vs non-frontal group M = 97.16 (SD = 37.21) vs control M = 69.80 (SD = 16.94); F = 39.65, p < .001. Post hoc analyses: significant differences: frontal > non-frontal > controls.

	Velligan, Ritch, Sui, DiCocco, and Huntzinger (2002) found higher correlations with similar constructs (FsRBe Apathy with Verbal Fluency (VF): r = -.47, FrSBe Disinhibition with TMT-Berrors: r = .42), and lower correlation with dissimilar constructs (FrSBe Apathy with TMT-Berrors: r = .17; FrSBe Disinhibition with VF: r = -.16) in a sample of 131 people with schizophrenia and 51 healthy controls. Concurrent validity was assessed in the same sample: Executive with VF: r = -.43 – with TMT-B time: r = .48. Inter-rater reliability: (Velligan et al., 2002), assessed n = 10 with 6 raters, achieving an inter-rater reliability ranging from .83-.89 for the total score and .79-.92 for subscales. Test-retest: (Velligan et al., 2002), across a 3 months interval, the overall score correlated significantly, r = .78.
Advantages	• Provides comprehensive understanding of executive functions, with: a) "Before" and "after" ratings, which can be used in conjunction or separately b) Subscales that are clinically meaningful c) And that have been verified statistically • Carefully developed scale with quite good psychometric properties (but data on reliability and responsiveness are limited) • Has some, but not extensive, normative data (n=436) • In terms of a head-to-head comparison, the obvious alternative is the Behavior Rating Inventory of Executive Function (BRIEF): - the FrSBE is shorter (46 vs 75 (adult version) items) - FrSBe contains "before" and "after" ratings - neither scale has responsiveness data, but perhaps the FrSBe will be at advantage, having a 5-point vs 3-point rating scale - the FrSBe has better data regarding concurrent validity, which is quite poor for the BRIEF - factor structure and scales of each are roughly similar; some of BRIEF subscales contain a small number of items • The other head-to-head comparison would be the Dysexecutive Questionnaire: - FrSBe is longer (46 vs 20 items) - Factor structure of FrSBe is probably sounder, although recent Rasch analyses with the DEX has yielded good fit to the model, and Rasch analysis has not yet been conducted for FrSBe - FrSBe has normative data
Disadvantages	• Not freely available; needs to be purchased • In terms of a head-to-head comparison, the obvious alternative is the Behavior Rating Inventory of Executive Function (BRIEF): - the normative data for the FrSBE (n=436) are not as extensive as the BRIEF (n=1,050 (self) and 1,200 (informant) based on US census distribution – and similar large n's for child version) - this point is not a disadvantage, so much as a consideration; but FrSBe is only available for adults, whereas BRIEF has versions from 2years upwards, thus affording more of a lifespan approach if longitudinal/cross sectional comparisons are relevant.

References

Grace, J., & Malloy, P. F. (2001). *FrSBe Frontal System Behaviour Scale: Professional manual*. Lutz: Fl: Psychological Assessment Ressources, Inc.

Grace, J., Stout, J. C., & Malloy, P. F. (1999). Assessing Frontal Lobe Behavioral Syndromes with the Frontal Lobe Personality Scale. *Assessment, 6*(3), 269-284. doi: 10.1177/107319119900600307

Stout, J. C., Ready, R. E., Grace, J., Malloy, P. F., & Paulsen, J. S. (2003). Factor Analysis of the Frontal Systems Behavior Scale (FrSBe). *Assessment, 10*(1), 79-85. doi: 10.1177/1073191102250339

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