Neurogenic Bowel Dysfunction Score (NBD)

Assessment Overview

Assessment Area

ICF Domain:

Body Functions

Subcategory:

Digestive, Metabolic and Endocrine

You Will Need

Length:

10 items

Scoring:

Total score: out of 47 (each item has a weighted response base)

Severity of bowel dysfunction:
Score 0-6: Very minor
Score 7-9: Minor
Score 10-13: Moderate
Score 14+: Severe

Summary

The Neurogenic Bowel Dysfunction Score (NBD) is a self-report questionnaire designed to help healthcare professionals evaluate the effectiveness of their patient's current bowel management routine by assessing the impact it has on the patient's quality of life.

Questions ask about background parameters (n=8), faecal incontinence (n=10), constipation (n=10), obstructed defecation (n=8), and impact on quality of life (QOL).

Availability

Worksheet: Can be found here.

Languages: English, Dutch, Turkish, and Spanish.

Commented [CC1]: Asked permission for the languages papers on 13-08-2024:
- Spanish: Pending.
-Dutch: Pending.
-Turkish: Pending.

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Not established in SCI

Measurement Properties

Validity – Low to High

Low to High Correlations between total NBD score & SF-36 subscales:

Bodily pain subscale: r = -0.382 (low)

General health subscale: r = -0.560 (moderate)

Vitality subscale: r = -0.626 (moderate)

Social role functioning subscale: r = -0.741 (high)

Emotional role functioning subscale: r = -0.604 (high)

Mental health subscale: r = -0.687 (high)

High Correlation between change in total NBD score and change in Global Rating of Change scale at end of 2 months:

r = 0.821 (P=0.007)

(Erdem et al. 2017; n=42, mean age (SD): 39 (16) years; level: 12 cervical, 24 thoracic, 6 lumbar; acute and chronic, Turkish version)

High Correlation between total NBD score & FIQL

r = -0.648

Moderate Correlation between total NBD score & FISI

r = -0.367

High Correlation between total NBD score & EQ-5D-3L index score:

r = -0.589

Moderate Correlation between total NBD score and EQ-5D-3L VAS Score

r = -0.428

(Van Doorn et al. 2022, n=55; 6 males, 19 females; mean (SD) age: 54 (15.8) years; 14 cervical, 20 thoracic, 9 lumbar, and 3 unknown; 15 ASIA A, 7 ASIA B, 10 ASIA C, and 9 ASIA D; mean (SD) time since injury: 13.6 (8.4) years; Dutch version)

Number of studies reporting validity data: 3

Reliability – Low and High

Moderate Internal Consistency:

α = 0.547

High Test-retest answers of each question:

r = 1.000, P<0.001

High Consistency of frequency distribution:

r = 1.000, P<0.001

(Erdem et al. 2017; n=42, mean age (SD): 39 (16) years; level: 12 cervical, 24 thoracic, 6 lumbar; acute and chronic, Turkish version)

Low to Moderate Internal consistency:

Test: α = 0.56

Retest: α = 0.30

(Van Doorn et al. 2022, n=55; 6 males, 19 females; mean (SD) age: 54 (15.8) years; 14 cervical, 20 thoracic, 9 lumbar, and 3 unknown; 15 ASIA A, 7 ASIA B, 10 ASIA C, and 9 ASIA D; mean (SD) time since injury: 13.6 (8.4) years; Dutch version)

High Construct Reliability

α = 0.897

High Test-retest Reliability

ICC = 0.886 (0.764 – 0.946)

(González-Viejo et al. 2021; n=59; 30 with SCI, 29 with cerebral vascular accident; 24 males, 6 females; mean (SD) age: 43.6 (11.7), chronic; Spanish version)

Number of studies reporting reliability data: 4

Responsiveness

Floor/Ceiling Effect:

Not established in SCI

Effect Size:

Not established in SCI

Number of studies reporting responsiveness data: 0