

## **P99 Clinimetric properties of the Sleep Disturbance 8b and Sleep Related Impairment 8a in Huntington's disease**

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**Objective:** People with Huntington's disease (PwHD) experience a variety of sleep disorders including insomnia and circadian rhythm disturbances, but little research exists with field-standard sleep assessments in Huntington's disease (HD) samples including the foundational clinimetric analyses required to establish their reliability and validity.

**Methods:** We introduced the PROMIS Sleep Related Impairment 8a (SRI) and Sleep Disturbance 8b (SD) scales in Enroll-HD, a longitudinal observation study of HD. An analysis of the baseline data for 377 PwHD categorized as HD-ISS Stages 2- 3 revealed mean SRI scores of 48.3 (SD = 10.2) with a range of 30 to 75 and mean scores of 49.5 (SD = 8.7) with a range of 33 to 76.5. No floor or ceiling effects were observed (skew < 1.5 for all items). Internal consistency was acceptable for both scales ( $\alpha = .90$  and  $.92$ ), as were all item-to-total correlations ( $r$ 's =  $.50 - .80$ ). The correlation between the SRI and SD scales was moderate ( $r = .622, p < .001$ ). Correlations between the SRI and SD and field-standard measures of motor symptoms and cognitive scores were low and non-significant ( $r$ 's =  $-.067 - .021$ ), while correlations with anxiety ( $r = .497, p < .001$ ), depression ( $r = .476, p < .001$ ) and functional ability ( $r = .522, p < .001$ ) were all moderate and statistically significant. A two-factor structure best fit both scales, though many items cross-loaded (factor loadings  $\geq .4$ ).

**Results:** Item response theory analyses revealed statistically significant discrimination values for all items and all but two from the SRI scale (Sleep7 & Sleep 119) exhibited ordered thresholds. Finally, information plots for total scores were in line with those from the standardization sample with SRI being shifted slightly to the right of  $\theta = 0$  and SD being centered around  $\theta = 0$ .

**Conclusions:** Together, our results support the reliability and validity of the PROMIS SRI and SD scales in HD. Additional research will determine the content validity of these scales in HD, the reliability and validity of the SD and SRI in and across disease stages in HD, and longitudinal properties and nature of these scales in PwHD.