Test Re-test Validation Study of the Vitiligo Noticeability Scale (VNS)

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Abstract:

Background: The Vitiligo Noticeability Scale (VNS) is a patient-reported outcome measure designed to assess how visible vitiligo remains after treatment. Previous studies have demonstrated its construct validity, acceptability, and interpretability, but test-retest reliability has not been reported.

Objectives: To assess the test-retest reliability of the VNS using images from the Hi-Light Vitiligo Trial and to evaluate the reliability of "global treatment success," a binary assessment of overall improvement.

Methods: Thirteen members of a patient panel assessed 87 pairs of pre- and post-treatment images using the VNS and global success scale. Assessments were repeated at a later time without panel members knowing they were rating the same images. Weighted kappa statistics (VNS) and Cohen's kappa (global success) were calculated with 95% confidence intervals using STATA 17.

Results: For the VNS, kappa scores ranged from 0.49 to 0.83, with a median weighted kappa of 0.67 (95% CI 0.45–0.71). This indicates substantial test-retest reliability, slightly below the COSMIN threshold for high reliability. Global treatment success scores ranged from 0.45 to 0.90, with a median kappa of 0.76 (95% CI 0.61–0.91), meeting COSMIN criteria for high reliability.

Conclusions: The VNS demonstrates substantial test-retest reliability supporting its potential as an outcome measure. Further evaluation involving patients rating their own vitiligo is recommended to confirm its reliability in real-world settings. The global treatment success scale showed high reliability, supporting its potential as a complementary outcome measure.