



Psychometrics for Social Cognition in Schizophrenia

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Background

- Many existing social cognition measures are not well defined or psychometrically sound for use in schizophrenia research (Couture, Penn, & Roberts, 2006; Fett et al., 2011).
- Social cognition is particularly important in schizophrenia treatment because of its unique relationship to functional outcomes and strong response to treatment.
- The SCOPE study was the first major effort to establish social cognition measures for use in clinical trials (A. E. Pinkham, Penn, Green, & Harvey, 2015). Only two measures (BLERT and Hinting) were concluded to be appropriate for use in clinical trials. No measure of attributional bias was psychometrically sound.

Current Study Goals

Evaluate social cognitive measures' (i) test-retest reliability; (ii) relationship to a standard measure of social cognition (MSCEIT); (iii) relationship to motivation for and knowledge about social-cognitive training; (iv) relationship to symptoms and quality of life (criterion validity); and (v) incremental validity beyond neurocognitive abilities.

Measures

Social cognition measures: IPSAQ, AIHQ, Hinting, Eyes Task, TASIT, Picture Stories Task, Comic Strip Task, DACOBS, BLERT
Other measures: MATRICS Concensus Cognitive Battery (MCCB), SCID-5, PANSS, QoL, IMI-SR

Non-normal Sample Distributions

Positive skew: QoL Instrumental, PANSS Negative & Hostility.

Negative skew: IMI, Hinting, TASIT Lies, Picture Stories

Test-retest Problems

T1:T2 $r < 0.6$: IPSAQ Externalizing; AIHQ; TASIT Sarcasm and Lies; Picture Stories

Test-retest Changes

T2-T1 $p \leq 0.05$ (and d_z): QoL Instrumental (-.30); DACOBS Total (-.39), Belief Inflexibility (-.31), and Avoidance Behaviors (-.37); TASIT Total (-.74) and Sarcasm (-.86); Picture Stories (+.58); Comic Strip (+.33)

Concurrent Validity (MSCEIT)

Significantly Correlated: Eyes (.406); DACOBS Total (-.297) and Belief Inflexibility (-.487); Picture Stories (.380); TASIT Total (.456) and Sarcasm (.398).

Incremental Validity: These variables predicted 42% of the variance in MSCEIT, 28% more than what is predicted by MCCB. DACOBS Belief Inflexibility and TASIT Sarcasm remained significant in the full model.

Criterion Validity

IMI: Social cognition did not predict motivation.

Knowledge: Hinting and BLERT accounted for 20%, but not incrementally more than MCCB Total.

QoL: DACOBS Total, Belief Inflexibility, Selective Attention to Threat, Subjective Cognitive Problems, and Avoidance Behaviors; TASIT Lies; and not MCCB accounted for 31% of the variance.

PANSS: AIHQ and DACOBS accounted for 21% of the variance in Positive and 37% of the variance in Emotional.

BLERT and TASIT Sarcasm accounted for 24% of the variance in Cognitive. Hostility was only related to Picture Stores (10%). Negative only to IPSAQ Personalizing (14%).

Conclusion

DACOBS, especially Belief Inflexibility, and TASIT, particularly promising, related to MSCEIT and QoL, as well as symptom severity. DACOBS limited by decreasing scores, and TASIT by non-equivalent alternate forms and differing profiles of subscales.

SCOPE Replication

- AIHQ unstable, but related to symptoms
- Hinting ceiling, but stable
- Hinting not related to MSCEIT, Symptoms, or QoL
- BLERT sound, related to Cognitive symptoms
- BLERT not related to MSCEIT or QoL
- Eyes sound, related to MSCEIT
- Eyes not related to Symptoms or QoL
- TASIT promising, but issues with alternate forms
- TASIT subscales function differently, with more psychometric issues than Total score.

Future Directions

- IPSAQ Personalizing (not Externalizing) and DACOBS may add substantially to social cognitive assessment.
- Comic Strip sound, but no evidence of validity. Picture Stories related to MSCEIT and Hostility symptoms, but psychometrically unsound.