Cognition as an Outcome Measure in Schizophrenia

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Cognition as an outcome measure in schizophrenia

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Kraepelin adopted the term dementia praecox to level a condition characterized by early psychosis and cognitive deterioration

- Bluer though emphasized on affect thought and perception, still viewed cognitive deficit as integral to disorder
The perceived importance of cognition in schizophrenia has since waxed and waned.

- Kraepelin's cognitive and negative symptoms were overshadowed by more observable symptoms like positive symptoms.
- RDC DSM iii and iv all emphasized on positive symptoms and cognition is still not included in the criteria.
A renewed interest in cognition was seen recently. Spurred by strong empirical relationship between cognition and real world functioning.
Several studies have failed to demonstrate positive correlation between positive symptoms and functioning
Impaired cognition as core feature of schizophrenia

- Severely impaired performance on cognitive tests
- One to 2 SD below normal, in metaanalysis,
- Broad cognitive deficit of moderate to severe magnitude
- Cognitive symptoms lack correlation with positive symptoms and severity.
Impaired cognition is not an epiphenomenon of clinical symptom.

- Some studies have reported normal cognition in significant number of people.
- 80-95% of twins with schizophrenia scored below their unaffected twins.
98% of people with schizophrenia performed below the level predicted by estimates of their premorbid functioning as against 42% controls, based on a meta-analysis.
Several studies have now demonstrated that cognitive deficits occur in first episode schizophrenia who have never taken antipsychotics.
Unlike Schneider's first rank symptoms cognitive symptoms correlate highly with measures of functional outcome
Cognitive factors are key and perhaps limiting factors in rehabilitation.

- Overwhelming evidence of cognitive deficit has spurred USA NIMH to target such deficits by pharmacological interventions.
Separate domain of deficit vs. general deficit

- Deficit is best described as broad and in specific domains
- A large meta-analysis found that performance is best described on six domains of cognition
  - Verbal comprehension; perceptual organization
  - Auditory memory; visual memory
  - Working memory & processing speed
Some analysis described strikingly broad deficit spanning all domains; others found deficit on specific domains e.g. working memory, executive function, & verbal memory,

- Though some have found differential impairment across domains,
- others have noted that the impairment is mediated through a final common factor,
- suggesting ‘generalized cognitive impairment’
This debate has implication for etiology:

whether underlying brain abnormalities are local or global.
Tools for measuring Cognition

- Depends upon the research question
- Large batteries have disadvantage of missing data
- Extensive batteries are impractical
- However a larger battery increases the chances of measuring multiple domains of cognition.
Test batteries

- WAIS-III; WMS-III- lengthy,
- MCCB: many domain scores on performance
- Scores: high face validity, high subjectivity
- UPSA: domain level analysis not possible
- RBANS: lacks measures of domains
- BACS: minimum time required, designed for research
- BCA: High correlation with functional outcome
- Computerized batteries
- Psycho physiological tests
Cognitive impairment is returning to prominence

- Being considered for inclusion in ICD & DSM.
- Most cognitive outcomes measures tend to suffer from low face validity
- It is not obvious to patient /caregivers that improvement in cognition would make a difference to patients quality of life.
- Thus appropriate test for functional outcome needs to be co-administered