Autism & Psychosis Measures

PDDST-II, ADOS, ADI-R, CARS

BPRS, SAPS/SANS, PANSS

Pervasive Developmental Disorder Screening Test - II

Development

For use with children between 12-48 months

Used for early identification of Autism and Asperger's

Qualification Level: B

Normed on nearly 1000 subjects

Test Stages

Stage 1- Primary Care Screener (PCS)

Parent-completed questionnaire designed to identify children at risk of autism from the general population

Ages 12-48 months

22 Questions; 10-15 minutes to administer; 5 minutes to score

Validated by study done on 681 children at risk for ASD and 256 with mild to moderate developmental disorder

Sensitivity: 0.85-0.92 (moderate to high)

Specificity: 0.71–0.91 (moderate to high)

Test Stages

Stage 2- The Developmental Clinic Screener(DCS)

Parent-completed questionnaire designed to detect children at risk of autism from other developmental disorders

Ages 12-48 months

14 Questions; 10-15 minutes to administer; 5 minutes to score

Validated using evaluations on 490 children with confirmed ASD and 194 children who were evaluated for ASD but did not receive a diagnosis

sensitivity: 0.69–0.73 (moderate)

specificity: 0.49–0.63 (low)

Test Stages

Stage 3- The Autism Severity Screener

12 item screening tool for autism clinics

Reported sensitivity of 0.58

Reported specificity of 0.60

Scoring

A score above a 5 (more than 5 'yes' answers) on the first stage indicates a need to screen using the second stage.

Scores above 5 on the second stage indicate need to continue to third stage.

In the third and final stage, scores above 8 indicate presence of pathology

Utility

Research
    Can be a useful research tool for early identification of autism

Clinical
    Should be used cautiously in clinical settings

Strengths

Takes about 10-20 minutes to administer
Quickly evaluates need for further treatment
Decent sensitivity and specificity data for stage 1

Limitations

Specificity and sensitivity have not been subject to thorough evaluation

Many items prone to confounds with ADHD

Sensitivity and Specificity data for stages 2 and 3 are not very good

Autism Diagnostic Observation Schedule

Test Development

Allows for accurate assessment and diagnosis of autism and PDD across different ages, developmental levels, and language skills

The individual being evaluated is given just one module, depending on his or her expressive language level and chronological age.

Modules

Modules 1 and 2 allow the child to move around the room, while 3 and 4 involve more conversation and can be administered at a table

The activities give 30-45 minutes of time where the clinician can observe and record relevant behaviors

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Module One

Used with children who do not consistently use phrase speech

Activities

   Free play, response to name, response to joint attention, bubble play, anticipation of a routine with objects, responsive social smile, anticipation of social routine, functional and symbolic imitation, birthday party, snack

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Module Two

Used with those who use phrase speech but are not verbally fluent

Module Three

Used with fluent children

Activities

Construction task, make-believe play, joint interactive play, demonstration task, description of a picture, telling a story from a book, cartoons, reporting a non-routine event/conversation, emotions, social difficulties/annoyance, break, friends/loneliness/marriage, creating a story

Module Four

Used with fluent adolescents and adults

Scoring

During administration, observations are recorded and then later coded for diagnosis

Cut-off scores are provided for both the broader diagnosis of PDD/atypical autism/autism spectrum, as well as the traditional, narrower conceptualization of autism.

ADOS

Strengths

    Can be used for a variety of ages and skill levels

Limitations

    Cost

    Does not address nonverbal adolescents and adults

Autism Diagnostic Interview-Revised

Development

Diagnostic interview to assess levels of Autism in children and adults above 18 months of age

Based on diagnostic criteria from both the DSM-IV and the ICD-10

Revised version is shorter version of original interview

    Done to improve ability to differentiate between Autism and other PDD's

Scoring

Semi-structured clinical interview

111 items, 3 areas

Quality of Reciprocal Social Interaction
Emotional sharing, offering, seeking comfort

Communication and Language
Stereotyped utterances, pronoun reversal, social use of language

Repetitive, Restricted, and Stereotyped Interests and Behavior
Unusual preoccupations, hand and finger mannerisms, unusual sensory habits

Scoring

After the interview, the clinician assigns a score between 0 (absence of behavior) to 3(severity of behavior)

Scores are then added for interpretation

For diagnosis, criteria in all 3 content domains must be met AND there must be evidence of abnormal behavior by 36 months

Scoring

Cutoff Scores for diagnosis:

Communication and Language
8 for verbal subjects; 7 for nonverbal subjects

Quality of Reciprocal Social Interaction
10 for all subjects

Repetitive, Restricted, and Stereotyped Interests and Behaviors
3 for all subjects

Reliability

Internal consistency

0.69 for Repetitive, Restricted, and Stereotyped Interests and Behavior

0.84 for Communication and Language

and 0.95 for Quality of Reciprocal Social Interaction.

Test retest reliabilities greater than 0.90 on all measures

Validity

Validity has been established through various studies and show that the test is able to discriminate accurately between Autistic and Non-Autistic children.

Strengths

Has good reliability

Can accurately differentiate between Autism and PDD in young children

High levels of sensitivity in young children

Moderate specificity in young children

Limitations

Can lead to over diagnosis of autism in young, severely mentally handicapped children

Further research is needed to differentiate Autism from other PDD's in older children

Can take at least 90 minutes to administer

Childhood Autism Rating Scale

Development

Initially developed by professionals with extensive experience with Autism

Should be used as a screening tool to determine if a specialist is needed

Designed to separate children with Autism from children that are developmentally disabled

For children above age 2

Development

Ratings are made by the clinician after observation, parent reports, history records
> It is important that the observations cover all areas of interest

Behavior should be compared against that of a normal child

When observing, make notes but do not rate or make judgments until all data has been collected

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Subscales

Relating to People
> Measures how the child behaves in a variety of situations involving other people

Imitation
> Measures how the child imitates verbal and nonverbal acts

Emotional Response
> Measures the appropriateness of the type and intensity of emotional response to both pleasant and unpleasant situations

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Subscales

Body Use
> Rates coordination and appropriateness of behaviors. Persistence should be tested by prohibiting bizarre movements.

Object Use
> Rates use and interest in toys appropriate for child's age

Adaptation to Change
> Measures difficulty changing established routines

Subscales

Visual Response

Rates any unusual visual attention patterns, including response when required to look at one object.

Listening Response

Unusual response to sounds or unusual listening behavior. Includes child's interest in the sounds.

Taste, Smell, and Touch Response and Use

Rates child's response to stimulation of the "near" senses and whether or not they use them appropiately

Subscales

Fear or Nervousness

Rates unusual fears and also the absence of normal fears.

Verbal Communication

Rates all areas of a child's verbal communication.

Nonverbal Communication

Rates all areas of a child's nonverbal communication, and the responses to nonverbal cues from others.

Subscales

Activity Level

Measure the child's activity levels in both restricted and unrestricted environments. Also measures persistence of the activity level.

Level and Consistency of Intellectual Response

Measures the extremely unusual or "peak skills"

General Impression

Overall rating of Autism, based on subjective impression.

Scoring

Before scoring the CARS, the clinician should read over the behavioral descriptions

Each of the 15 subscales is given a rating between 1 and 4, with .5 increments if necessary

When determining the degree of abnormality, consider age, frequency, intensity, and duration

Scoring

1. Within normal limits for that age

1.5 Very mildly abnormal for that age

2. Mildly abnormal for that age

2.5 Mildly to moderately abnormal for that age

3. Moderately abnormal for that age

3.5 Moderately to severely abnormal for that age

4. Severely abnormal for that age

Scoring

Scores from all 15 subscales are added together to get the autism rating

Scores are rated as follows:

Scores below 30 indicate a non-autistic child

Scores between 30-36.5 indicate mild to moderate autism

Scores between 37-60 indicate severe Autism

Normative Data

The scores are compared to norms gathered from over 1500 children evaluated by expert clinicians.

With an autism cutoff rate of 30:

    Overall agreement rate of 87%

    False negative rate of 14.6%

    False positive rate of 10.7%

Reliability

High internal consistency (0.94)

Good interrater reliability (total =0.71, items range from 0.55-0.93)

Test-retest reliability at one year (N=91) of 0.88 of total scores, Kappa of 0.62(82% agreement) on diagnostic categories

Validity

Although developed by experts in the field, valid ratings have been found from other professionals

    r= 0.83

Utility

Can easily discriminate those with Autism from other disorders, and can be used in a multitude of settings by various professionals
- School Psychologists
- Speech Language Pathologists
- Audiologists

Strengths

Product of long-term empirical research

Easy to administer

Easy to learn

Draws from the 5 prominent areas for diagnosing Autism

Limitations

Screening tool; not a diagnostic instrument

Brief Psychiatric Rating Scale

Development

Developed in hospitalized patients with functional psychotic disorders

Original 1962 Scale; 16 items

1972 Scale; 18 items

Designed to measure change in severity

Currently available free of charge

Scoring

Items rated on a 7- point scale, with a range of 0-108.

- 0: Not present
- 1: Very mild
- 2: Mild
- 3: Moderate
- 4: Moderately Severe
- 5: Severe
- 6: Extremely Severe

Scoring

Others may use anchors from 1-7, resulting in a range of 18-126.

After a semi-structured interview and observation, the trained clinician rates the person.

The scores are added up for the total score.

A specific time frame of observation needs to be set(usually one week prior)

Scoring

- On the BPRS full scale, a score of
  - 32 or more – mildly ill
  - 44 or more – moderately ill
  - 52 or more – markedly ill
  - Over 68 – severely ill

Should Anchors be more Specific?

YES!	NO!
Increases Reliability	Could alter the psychometric properties
Increases Validity	
Decreases Interviewer Drift	Could unnecessarily restrict the meaning of each item
Decreases differences between raters	

Factor Analysis

Five subscales have been found

Thought Disorder (TD)

Conceptual disorganization, hallucinatory behaviors, unusual thought content

Withdrawal/ Retardation (W)

Emotional withdrawal, motor retardation

Hostile/ Suspiciousness (H)

Hostility, suspiciousness, uncooperativeness

Anxiety/ Depression (A/D)

Anxiety, guilt feelings, depressed mood

Activity (A)

Tension, mannerisms and posturing, and excitement

Factor Analysis

A different study found two subscales

Specific to schizophrenia

Emotional withdrawal, conceptual disorganization, mannerisms and posturing, grandiosity, suspiciousness, hallucinatory behaviors, unusual thought content, and blunted affect

General symptoms

Somatic concern, anxiety, guilt feelings, tension, depressive mood, hostility, motor retardation, uncooperativeness, excitement, and disorientation

Reliability

Reliability varies depending on

Clinician training

Clinician experience

Discussion

Correlations of .80 or greater

Median for individual items ranged from .63 to .83

Reliability

Danish study found that more than 30 joint rating sessions were needed for consistency

Nursing staff using detailed anchor descriptions had better luck
- .52 to .90 for individual items
- Mean for all values was .72

Another group found that reliability increased on 15 out of 18 items after switching to detailed

Validity

Has shown good validity when compared with other measures of general psychopathology
- SAPS/SANS: r= 0.63

BPRS and PANSS
- Positive Scale: r= 0.92
- Negative Scale: r= 0.82
- Total Scale: r= 0.84
- General Scale: r= 0.61

Utility

Research
- Assess patient change due to treatment

Clinical
- Global measure of response to treatment in those already diagnosed with psychotic disorders

Strengths

Simple and efficient review of symptoms

Brief (takes about 20-30 minutes to give)

Items are consistent with clinical assessments

Limitations

Usefulness in clinical settings has not been empirically demonstrated

Clinicians may have to take extra time to be consistent

Does not cover all areas of potential concern

Less able to assess change in those with mild psychopathology

Lacks qualitative data; largely subjective

Scale for the Assessment of Positive/Negative Symptoms

Development

Designed to assess the severity of symptoms in patients with psychotic disorders

Clinicians rate the individual after a structured interview

Each scale takes approximately 30 minutes to administer

Both are available free of cost

Development-SAPS

30 items organized into several domains

Hallucinations (6 items)

Auditory hallucinations, voices commenting, voices conversing, somatic or tactile hallucinations, olfactory hallucinations, visual hallucinations

Delusions (12 items)

Persecutory, of jealousy, of sin or guilt, grandiose, religious, somatic, reference, controlled, mind reading, thought broadcasting, thought insertion, thought withdrawal

Development- SAPS

Bizarre behavior (4 items)

Clothing and appearance, social and sexual behavior, aggressive and agitated behavior, repetitive behavior

Formal thought disorder (8 items)

Derailment, tangentially, incoherence, illogicality, circumstantially, pressure of speech, distractible speech, clanging

Development- SANS

20 items organized into several domains

Affective flattening and blunting (7 items)

Unchanging facial expression, decreased spontaneous movements, paucity of expressive gestures, poor eye contact, affective nonresponsivity, inappropriate affect, lack of vocal inflection

Alogia (4 items)

Poverty of speech, poverty of content of speech, blocking, increased latency of response

Development- SANS

Avolition-Apathy (3 items)

Grooming and hygiene, impersistence at work or school, physical anergia

Anhedonia-Asociality (4 items)

Recreational interests and activities, sexual interest and activity, ability to feel intimacy and closeness, relationships with friends and peers

Attentional impairment (2 items)

Social inattentiveness, inattentiveness during mental status testing

Scoring

The clinician rates symptoms on a scale from 0 to 5, where 0 means that the symptom is absent and 5 indicates a severe presentation

Clinicians add up the totals to find Domain scores

Subscale scores can also be totaled

Each scale has a global severity rating after the domains

Scoring

Each subscale has a different range of scores, depending on the number of items

SAPS
- 4 global domain scores 0 to 20
- Sum of 30 items gives composite 0 to 150

SANS
- 5 global domain scores 0 to 25
- Sum of 20 items gives composite 0 to 100

Reliability

Inter-rater reliability SAPS/SANS and PANSS
- SAPS summary score= 0.84
- SANS summary score= 0.60

SAPS global domain scores and ICC
- Hallucinations= 0.91
- Delusions= 0.86
- Bizarre Behavior= 0.50
- Formal Thought Disorder= 0.75

Internal Consistency

SAPS	SANS
Hallucinations= 0.75	Alogia= 0.63
Delusions= 0.66	Affective Flattening and blunting= 0.83
Formal Thought Disorder= 0.74	Avolition-Apathy= 0.74
Bizarre Behavior= 0. 79	Anhedonia-Asociality= 0.77
	Attentional Impairment= 0.75

Validity

Concurrent Joint Ratings of 85 patients(Norman et al)
- SAPS and PANSS= 0.91
- SANS and PANSS= 0.88

Concurrent ratings of 100 patients (Nicholson et al)
- SANS and BPRS= 0.85
- SAPS and BPRS= 0.89

Validity

47 schizophrenia patients(Gur et al)
- BPRS schizophrenia items and
  - SAPS= 0.38
  - SANS= 0.61
- SAPS domains Hallucination, Delusions, and Formal Thought Disorder & BPRS thought disorder factor= 0.53-0.58
- SANS & BPRS anergic factor= 0.43-0.69

Validity

Longitudinal Studies have found that the SAPS actually has 2 constructs
- Psychoticism
  - Hallucinations and Delusions
- Disorganization
  - Formal Thought Disorder, Bizarre Behavior, Affective Flattening and Blunting

Most studies find that the SANS is cohesive as one factor

Utility

Research
  Evaluate treatment success
  Track relapse severity
Clinical
  Monitor treatment progress
  Quantify severity to plan treatment

Strengths

Easy to achieve objective and reliable results

Global rating scales measure impact on patient functioning

Collects highly detailed information

Part of routine clinical interview

Limitations

Does not include items to assess mood symptoms

Clinical usefulness has not been empirically demonstrated

Requires extensive training

Time-consuming to complete scales

More difficult to learn and administer than the BPRS and PANSS

Positive and Negative Syndrome Scale

Development

Designed to assess severity of psychotic disorders

Items include some from the BPRS and the Psychopathology Rating Scale

Authors wanted to make the BPRS better by adding additional symptoms

Usually takes 30-40 minutes to complete

Development

Like the BPRS, the PANSS is scored by the clinician after an interview and behavioral observations

The interview has several stages

 Discuss problems and life circumstances

 Ask specific PANSS questions

 Return to areas where the person was defensive

Test Items

3 scales, 30 items

    7 items make up the positive scale

        Delusions, conceptual disorganization

    7 items make up the negative scale

        Blunted affect, emotional withdrawal

    16 items make up the General Psychopathology Scale

        Somatic concern, anxiety, guilt feelings

Scoring

The clinician rates the severity of the behavior from 1 to 7.

    Above 1 indicates presence of clinically significant behavior

    2 to 7 indicates increasing severity

Scores are summed to determine total scores on the 3 scales

    Positive and Negative scores range from 7-49

    General Scale range from 16-112

Scoring

Can also be scored to indicate predominate Positive/ Negative symptoms

Composite Scale Score

    Simply takes the difference between the two scales

    Scores range from -42(only negative symptoms) to 42(only positive symptoms)

Scores can be converted to T-scores by using form available from publisher

Normative Data

240 Adult Patients that met criteria for Schizophrenia and were on antipsychotics
> 61 women, 179 men
> 106 African American, 60 Caucasian, 74 Hispanic
> Mean age was 33 years
> Mean duration of illness was 11 years

50th percentile corresponded to score of 20 on the positive, 22 on the Negative, and 40 on the General scales

Reliability

Intra-class correlations above 0.80 for all three scales has been found

Clinicians are able to reliably rate items after co-rating and discussing 8-10 interviews

Study of 101 patients found good internal consistency
> Positive: 0.73
> Negative: 0.83
> General: 0.87

Validity

56 hospitalized patients given both the PANSS and BPRS
> ICC correlations of 0.70 on 14 items
> Anxiety: 0.57
> Uncooperativeness: 0.51
> Mannerisms/ Posturing: 0.68
> Emotional withdrawal: 0.43

Shows that the PANSS definitions and severity anchors alter the meanings

Validity

Concurrent study of 51 schizophrenia patients

PANSS Positive subscales and the SAPS : r=0.77

PANSS Negative subscales and the SANS: r=0.77

PANNS General Psychopathology subscale and the Clinical Global Impression Scale: r=0.52

Factor Analysis

Several factors have been found

Negative – 5 negative items

Emotional Withdrawal

Passive/ apathetic social withdrawal

Lack of spontaneity and flow of conversation

Blunted affect

Poor rapport

Factor Analysis

Cognitive and other – 2 negative items, 2 positive

Negative

Stereotyped thinking

Abstract thinking

Positive

Conceptual disorganization,

Suspiciousness/persecutions

Factor Analysis

Positive Factor – 3 positive items
- Delusions,
- Hallucinatory behavior
- Grandiosity

Excited – 2 positive items
- Hostility
- Excitement

Utility

Research
- Can assess treatment effects reliably

Clinical
- Assess severity of symptoms
- Help to target treatment to symptoms
- Can assess treatment effects reliably
- Can be used as prognostic indicator
- Quantify severity of relapse

Strengths

Objective and Reliable assessment

Easy to use

More importantly, it is easy to use reliably

Can be part of routine clinical interview

Limitations

Validity of symptom constructs is always changing

Clinical usefulness may be limited due to differential treatment effects