

## Neuropsychological Assessment Report

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

1

## The NP Assessment Report

- Identifying Information & Presenting Problem
- Background
- Symptoms & History
- Clinical Interview & Mental Status Exam
- Neuropsychological Test Results
- Interpretation & Diagnosis
- Recommendations

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

2

## Identifying Information & Presentation

- Who is this person
  - identifying information
- Why are they receiving a NP assessment?
  - chief complaint
  - reason for referral
  - desired outcomes

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

3

## Background : Symptoms & History : Family

- Family background - Parents, relatives and children
  - history of similar illnesses, other illnesses
    - development of symptoms
    - response to treatment
  - educational & occupational achievement
  - genetic issues

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

4

## Background : Developmental

- Developmental
  - birth
  - early childhood milestones
  - education
    - primary
    - secondary
    - post-secondary
    - learning disabilities
  - psychosocial milestones
    - relationships, offspring...

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

5

## Background : Symptoms & History

- Sx and Hx
- Course of symptoms
  - insidious vs. acute
  - episodic vs. chronic
  - subjective
  - objective
  - treatment
  - compensation
  - consequence

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

6

## Behavioral Observation

- Observation
  - direct
  - third-party
  - behavioral assessment
- Clinical Interview
  - Mental Status Exam...

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

7

## MSE : Mental Status Exam

- Structured, systematic observation of a person's behavior during the interview
- Major Areas
  - Appearance & Behavior
  - Thought Processes (and Speech)
  - Mood & Affect
  - Intellectual functioning
  - Sensorium & Orientation

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

8

## MSE : Appearance and Behavior

- Appearance
  - Sex, age (actual and apparent), height weight, deformities
  - Attire, Grooming
  - Gait, Posture, expressions
- Behavior
  - On time, late
  - Needing help, confused
  - Motor behavior, tics, etc.
  - Eye contact
  - Attitude

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

9

## Review: The NP Assessment Report

- Identifying Information & Presenting Problem
- Background
- Symptoms & History
- Clinical Interview & Mental Status Exam
- Neuropsychological Test Results
- Interpretation & Diagnosis
- Recommendations

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

10

## MSE : Speech & Thought Form

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• Speech Production<ul style="list-style-type: none"><li>▪ Volume</li><li>▪ Rate</li><li>▪ Flow</li><li>▪ Accent</li><li>▪ Prosody</li><li>▪ Stuttering</li><li>▪ Dysarthrias</li></ul></li></ul> | <ul style="list-style-type: none"><li>• Thought Form<ul style="list-style-type: none"><li>▪ Logical, goal directed</li><li>▪ Tangential, Circumstantial</li><li>▪ Illogical</li><li>▪ Loose</li><li>▪ Perseveration</li><li>▪ Incoherent (word salad)</li><li>▪ Clanging / Echolalia</li><li>▪ Neologisms</li><li>▪ Paraphasias</li></ul></li></ul> |
|---|---|

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

11

## MSE : Thought Content

- Content
  - Delusions
  - Hallucinations
  - Ideas of Reference
  - Thought insertion, withdrawal, broadcast
  - Obsessions, Ruminations, Impulses
  - Phobias
  - Ideation of Harm to self or others
    - Thoughts
    - Plans
    - Means
    - Actions

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

12

## MSE : Mood & Affect

- Mood
  - first person impression of how they feel
  - Internal, Sustained
- Affect \*
  - external appearance of mood
    - normal, restricted, blunted flat
    - expansive, infectious
    - appropriate or inappropriate
    - mood-congruent or incongruent
  - External, momentary
- \* *Note : this definition is not universal*

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

13

## MSE : Intellectual Functioning

- Abstract thought vs. Concrete
  - “What brings you here today?” - “A taxi”
- Insight
  - “My tummy hurts” vs. “I’m worried about failure”
- Judgement
  - “Should an alcohol abuser go to a bar?”
- Reasoning
  - “Why is taking your medication important?”
- Planning
  - If you have only one pill left, what should you do?
- Memory
  - Short and Long term

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

14

## MSE : Consciousness & Sensorium

- Consciousness / Alertness:
  - sleepy, awake. Consistent or variable?
- Orientation (x3 or x4)
  - Person - who are you?
  - Place - where are you?
  - Time/Date - when is it?
  - Situation / Reason for visit - why are you here?
- Sensorium:
  - Clear or Clouded
  - Hallucinations, dissociations

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

15

## MSE Checklist

<b>Appearance</b> : sex, age, height, weight, deformities, attire, grooming, gait, posture, expression	<b>Mood</b> : Euthymic, depressed, anxious, euphoric, angry, irritable.
<b>Behavior</b> : On time, needing help, confused. Motor behavior, tics, eye contact. Attitude.	<b>Affect</b> : Range: full, restricted, blunted, flat. Lability. Appropriate, inappropriate.
<b>Speech</b> : Volume, rate, flow, accent, prosody, stuttering, dysarthria, incoherent, word salad, clanging, echolalia, neologisms, paraphasias	<b>Cognition</b> : Abstract thought, insight, judgement, reasoning, planning, memory.
<b>Thought Form</b> : Logical & goal-directed, illogical, tangential, circumstantial, loose. Perseveration	<b>Consciousness</b> : Awake, sleepy, sedated.
<b>Thought Content</b> : Delusions, hallucination, Ideas of Reference, thought insertion / withdrawal / broadcast, obsessions, ruminations, impulses, phobias. Violent Ideation: thoughts, plans, means, actions	<b>Orientation</b> : Person, place, time, situation.

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

16

## Neuropsychological Test Results

- Issues
  - Qualitative vs. Quantitative...
  - Norms & premorbid functioning...

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

17

## Quantitative Data

- Pros
  - standardized
  - replicable
  - precision, accuracy, reliability & validity
    - can be estimated
  - bias : reduced
  - science
- Cons
  - impersonal
  - penalizes individual differences / creativity
  - may miss important clues
  - sensitive but perhaps not specific
    - Example: poor performance on Trails B - why?

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

18

## Qualitative Data

- Pros
  - personal
  - individualized
  - detailed
  - pathognomonic - *latin, pathos: disease, gnomon: judge*
  - explains Why or How
    - may suggest compensation strategy
  - art
- Cons
  - biased, arbitrary
  - cultural issues
  - subject to over-interpretation
  - limited reliability, validity, precision and accuracy

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

19

## Interpretation

- Establish premorbid functioning
- Compare current functioning to premorbid
- Explain in context of symptoms & history
- Diagnosis

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

20

## Recommendations

- Based on diagnosis and interpretation
  - describe Prognosis
    - immediate
    - recovery
    - long-term
    - social
    - vocational
  - recommend clinical interventions
    - medical
    - psychological
  - recommend compensations
    - operational
    - vocational
    - psychosocial

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

21

## Recommendations 2

- Rehabilitation
- Further NP Assessment
- Referrals to other specialists

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

22

## Common Issues

- Estimating Premorbid Functioning
- Ecological Validity & Overgeneralization
- Confirmatory Bias
- Base Rates, Hit Rates, False Positives & False Negatives
- Effects of Effort & Motivation

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

23

## Premorbid Functioning

- Rarely have pre-morbid test data, so must estimate it
- Demographic variables affect performance
- Use statistical normative data and adjust for
  - age, education, sex, race...
- Problems:
  - normative data : rarely detailed enough
  - definitions of “education”, “race”...
  - cohort changes

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

24

## Ecological Validity & Overgeneralization

- NP Testing is artificial
  - at one place
  - at one time
  - uncomfortable
  - doesn't measure ability to learn, improve, adapt
- Problems
  - "having a bad day"
  - strategy: accuracy vs. speed tradeoffs
- Conclusion:
  - predictions should be humble
    - "will never be able to work again" -- are we sure of this?

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

25

## Confirmatory Bias

- Motivations of related parties
  - lawsuit? medical care? release from responsibility?
  - individual variations
    - most people have odd behavior if you look closely enough
    - over-pathologizing

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

26

## Base rates & Hit Rates

- When the Base Rate of a disorder is very low, even using tests with very high sensitivity & specificity
  - Likely to have more False positives & False negatives than Hits
- Example:
  - if a disease is in 1/1000 patients, and your tests have 99% specificity and 99% sensitivity...
  - You will diagnose 10 of 1000 as having the disease
    - but 9 of them will not (a 90% false positive error rate!)

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

27

## Effort & Motivation

- Low effort impacts performance
- What affects effort?
  - motivation
  - ability
  - fatigue
  - frustration
- Problem:
  - risk of confusing "Can't do it" with "Won't do it"
- Strategies:
  - ensure motivation, rest breaks, maintain rapport
  - symptom validity tests
    - detect malingering

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

28

## Neuropsychological Assessment Report Assignment

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

29

## NP Assessment Report Assignment

- Goals:
  - Clinical, individualized, humanistic : real-world issues of human emotion and illness
  - Technical, scientific : calculating and interpreting NP tests and making a diagnosis
  - Writing: college-level writing to meet CSUSM writing requirement
- Reminders:
  - 2500 words (about 10 pages double spaced)
  - Grammar & writing style counts. Help if needed from CSUSM writing center.
  - Submitted twice: once for feedback (60 points), once for final grade (40 points).

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

30

## NP Report: Scoring

- Format: Use APA format. Graphs and tables may be located within the text, or in an appendix at the end.
- Grading
  - 30% Overall Grammar, Style & Organization, APA format
  - 70% Each of the seven sections is worth 10%
- Outline
  1. Identifying Information & Presenting Problem
  2. Background
  3. Symptoms & History
  4. Clinical Interview and Mental Status Exam
  5. Neuropsychological Test Results
  6. Interpretations & Diagnosis
  7. Recommendations

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

31

## NP Assessment Report Assignment

- Materials
  - Patient video (10 minutes)
  - Additional background information
  - NP Test Results
    - NP Test score conversion tables
    - use formulas and tables from published articles
  - Textbook
  - Lecture Notes

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

32

## MSE Checklist

<b>Appearance</b> : sex, age, height, weight, deformities, attire, grooming, gait, posture, expression	<b>Mood</b> : Euthymic, depressed, anxious, euphoric, angry, irritable.
<b>Behavior</b> : On time, needing help, confused. Motor behavior, tics, eye contact. Attitude.	<b>Affect</b> : Range: full, restricted, blunted, flat. Lability. Appropriate, inappropriate.
<b>Speech</b> : Volume, rate, flow, accent, prosody, stuttering, dysarthria, incoherent, word salad, clanging, echolalia, neologisms, paraphasias	<b>Cognition</b> : Abstract thought, insight, judgement, reasoning, planning, memory.
<b>Thought Form</b> : Logical & goal-directed, illogical, tangential, circumstantial, loose. Perseveration	<b>Consciousness</b> : Awake, sleepy, sedated.
<b>Thought Content</b> : Delusions, hallucination, Ideas of Reference, thought insertion / withdrawal / broadcast, obsessions, ruminations, impulses, phobias. Violent Ideation: thoughts, plans, means, actions	<b>Orientation</b> : Person, place, time, situation.

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

33

## NP Report : Score Table

Test Name	Subtest Name	Raw	SS	IQ	T	Z
WAIS-4	FSIQ			80		
WAIS-4	GAI			91		
WAIS-4	VCI			90		
WAIS-4	PRI			92		
WAIS-4	CPI			70		
WAIS-4	WMI			68		
WAIS-4	PSI			72		
Trail Making	Trails A	34 seconds				
Trail Making	Trails B	110 seconds				
COWAT	FAS (Letter)	28 words				
COWAT	Animals (category)	31 words				
NAART	# correct	54 words				

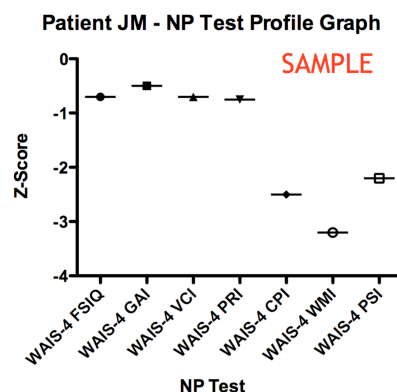
Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

34

## NP Report : Graph

- You may use any graph program
- Minor variations are OK
- Free license to Graphpad Prism for CSUSM Students

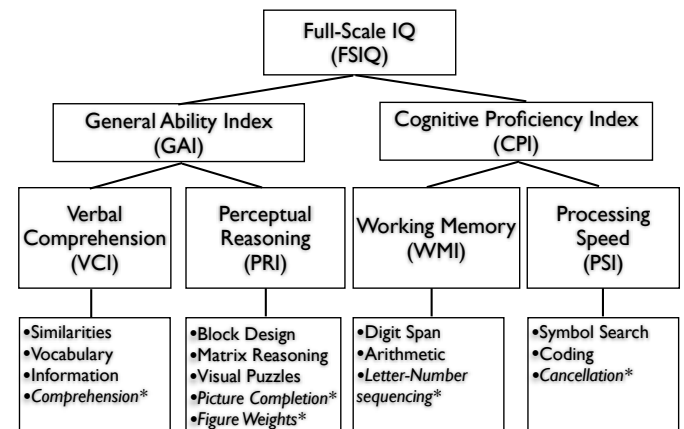


Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

35

## WAIS-4



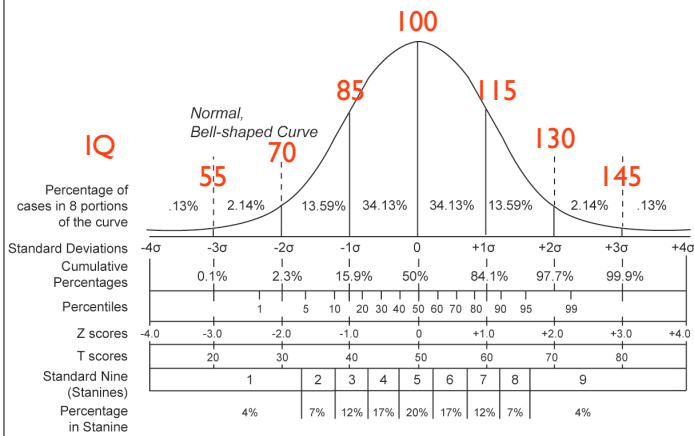
\* is not part of core battery

Psychology 403 - Fall 2010 - Dr. Michael Doherty

Tuesday, November 20, 12

36

# Standard Scores



Tuesday, November 20, 12

37

## COWAT - Scoring Example

- First, determine your Raw score
  - X = \_\_\_\_\_ (for FAS, total across all letters)
- Next, convert Raw score to Scaled score (see table)
  - Scaled = \_\_\_\_\_
- Next, determine demographic variables (age, education, gender, ethnicity)
- Use formula to convert Scaled score to T score
  - T-score = \_\_\_\_\_
- Now, double-check by comparing computed T score with T-score from lookup table

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

38

## COWAT - Raw to Scaled Conversion

Table 4  
Scaled Score Equivalents to Raw Scores for Letter (FAS)  
and Category (Animal) Fluency

Scaled score	Raw score	
	FAS	Animal
19	78+	37+
18	73 - 77	33 - 36
17	67 - 72	31 - 32
16	63 - 66	30
15	58 - 62	29
14	54 - 57	27 - 28
13	50 - 53	25 - 26
12	46 - 49	23 - 24
11	42 - 45	21 - 22
10	37 - 41	19 - 20
9	33 - 36	17 - 18
8	29 - 32	15 - 16
7	26 - 28	14
6	21 - 25	13
5	18 - 20	12
4	15 - 17	11
3	13 - 14	10
2	0 - 12	8 - 9
1		0 - 7

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

39

## COWAT - Formula

### Appendix B

#### Letter (FAS) and Category (Animal) Norms Formulas

Demographically corrected T scores for fluency can be calculated as follows:

Letter (FAS) T score =  $14.796 + (3.584 \times \text{FAS Scaled Score}) - (0.914 \times \text{Education}) + (0.177 \times \text{Age}) + (5.470 \times \text{Race})$

Category (Animal) T score =  $10.450 + (3.558 \times \text{Animal Scaled Score}) - (1.048 \times \text{Education}) + (0.301 \times \text{Age}) + (8.476 \times \text{Race})$

Education = years of education successfully completed.

Age = actual age (if age is 20-34 years, age is coded as 34 years).

Race: Caucasian = 0, African American = 1.

Psychology 465 Human Neuropsychology Fall 2012

Tuesday, November 20, 12

40