Using Scales and Measurement to Improve Quality in your Geriatric Psychiatry Practice

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Objectives

• Name 3 limitations of the MMSE and 2 ways in which it is useful clinically

• Describe the use of the NPI in pts with dementia and behavior disturbance.

• Describe how information about attention affects interpretation of standard cognitive assessments.

• List 3 ways testing for a person with Vascular Dementia might differ from a person with Alzheimer’s Dementia.
Tools:
- Global Rating of Severity
- Global Rating of Change
- MMSE
- SLUMS
- MoCA
- CDT
- MiniCog
- Mattis DRS-2
- TRAILS A and B
- Cognistat (NCSE)
- Blessed OMC
- NPI
- MSSE
- FAST
- PAINAD
- ICDSC
- EXIT-25
- GDS
- HAM-D

Case studies:
- Alcoholic dementia
- Alzheimer's Disease
- Frontotemporal dementia
- Vascular dementia,
- Lewy Body Dementia
- Parkinson's Disease Dementia
- Major Depressive Disorder
- Delirium
- Subacute delirium
- Mania
- Depression in Dementia
- Pain assessment in dementia
- Suffering in dementia
Why Scales?

• Scales help us understand the level of symptomatology of our patients, aid diagnosis and help gauge treatment efficacy

• The art of medicine is in matching tools to symptoms and signs and interpreting results
Measurement 101

- Reliability vs. Validity
- Positive Predictive Value (PPV)
- Sensitivity vs. Specificity
- Type I vs Type II errors
Reliability vs. Validity

- **Reliability**
  - Is the measure accurate?

- **Validity**
  - Does it measure what it is supposed to?
Positive Predictive Value (PPV)

• If the instrument says depression, what is the probability that the patient actually has depression?

\[
\text{PPV} = \frac{\# \text{ correct instrument diagnosed depression}}{\# \text{ all instrument-diagnosed depression}}
\]
Sensitivity: When Yes means Yes

- If a patient has depression, what is the probability the instrument indicates depression?

\[
\text{Sensitivity} = \frac{\# \text{ correctly diagnosed with depression}}{\# \text{ actually have depression}}
\]
Specificity: When No means No

- If a patient does not have depression, what is the probability the instrument does not indicate depression?

\[
\text{Specificity} = \frac{\# \text{ correctly excludes depression}}{\# \text{ do not have depression}}
\]
The Sensitivity ↔ Specificity Continuum

### Sensitivity

<table>
<thead>
<tr>
<th>They really have depression.</th>
<th>You think they have depression, but they really don’t. (Type II error)</th>
</tr>
</thead>
<tbody>
<tr>
<td>You don’t think they have depression, but they really do. (Type I error)</td>
<td>You don’t think they have depression, and they don’t.</td>
</tr>
</tbody>
</table>

### Specificity
You want this

Better discrimination

50/50 chance

No discrimination

1.0

1 - (specificity)

sensitivity
Global Rating Scales
Global Rating of Severity

Clinical Global Impression – Severity scale (CGI-S)

- 7-point scale; rates severity of illness at the time of assessment, relative to the clinician's past experience with patients who have the same diagnosis.

  1 - No Symptoms
  2 - Minimal
  3 - Mild
  4 - Moderate
  5 - Moderately Severe
  6 - Severe
  7 - Extreme

Global Rating of Severity

Clinical Global Impression – Severity scale (CGI-S)

• Advantages
  – Quick
  – Free

• Disadvantages
  – Subjective
  – Dependent upon clinician experience
  – Not as valid as symptom-specific scales

Global Rating of Change

Clinical Global Impression – Improvement scale (CGI-I)

- 7-point scale; rates the degree to which the pt’s illness has improved or worsened relative to baseline.
  1 - Marked Improvement
  2 - Moderate Improvement
  3 - Minimal Improvement
  4 - No Change
  5 - Minimally Worse
  6 - Much Worse

Global Rating of Change

Clinical Global Impression – Improvement scale (CGI-I)

• Advantages
  – Quick if you know the patient well
  – Free
  – Robust measure of efficacy

• Disadvantages
  – If you don’t know the patient it is not quick and it is less robust

Criticism of Global Rating Scales

- Despite frequent use, the CGI has been criticized for being inconsistent, unreliable, and too general to provide meaningful information about patient clinical status or treatment response

- Potential flaws for validity and reliability
  - Inconsistency and asymmetry in scaling
  - Lack of clearly identified time frames for evaluating change (Dr N uses first eval and last appt)
  - Redundancy and different scaling in the two change measures (severity and improvement)
  - Inability to differentiate improvement ascribable only to the treatment effect
Scales to Assess Cognition
Dementia/Cognition Scales

• Issues inherent to performance-based assessment:
  – Comparison with normative values may not detect very mild decline in high functioning individuals.
  – May falsely detect dementia in individuals with life-long poor cognitive function

• Formal neuropsychological evaluations:
  – Have less bias, but require extensive training
  – Often too lengthy and tiring for frail elders

• Desired Attributes of a brief scale
  – Predictive of early dementia
  – Inexpensive
  – High face validity
  – Reliable, Sensitive, and Specific
  – Easy to administer and score

Mini Mental State Exam (MMSE)

• 30-item questionnaire
• Screens for cognitive impairment in orientation, memory, language, attention, visual/spatial ability
• Typical deterioration of 3-4 points per year

• Trivia: Susan was a psychiatry resident rotating on geripsych. Marshal was the attending. He kept asking for info, so she finally asked him to write down all of the things he wanted her to include → the MMSE was born, and they became Folstein MF and Folstein SE.

Folstein MF et al. (1975), J Psychiatr Res 12(3):189-198
Mini Mental State Exam (MMSE)

• Sensitivity:
  – 75.9 + 22.5 (range 21-100)

• Specificity:
  – 84.3 + 14.3 (range 46-100)

• Positive Predictive Value (PPV):
  – 69.6 + 24.6 (range 31-100)

• Negative Predictive Value:
  – 82.3 + 18.8 (range 32-100)

Mini Mental State Exam (MMSE)

• Advantages
  – Long considered the Gold Standard
  – Can be used for a common language between clinicians
  – Can be useful for serial screening

• Disadvantages
  – Affected by education and intelligence
  – Insensitive to early dementia
  – No measure of executive function
  – No longer free

Folstein MF et al. (1975), J Psychiatr Res 12(3):189-198
Mini Mental State Exam (MMSE)

• 2010 edition (MMSE-2:SV)
  – Standard version: 10 foreign languages

• MMSE-2: Brief Version (MMSE-2:BV)
  – Designed for rapid assessment
  – Useful for MCI

• MMSE-2: Expanded Version (MMSE-2:EV)
  – Sensitive to subcortical dementia
  – Does not have a ceiling effect

MMSE-2 home page. www.parinc.com
St. Louis University Mental State Exam (SLUMS)

VAMC
SLUMS EXAMINATION
Questions about this assessment tool? E-mail aging@slu.edu

Name __________________________ Age __________________

Is the patient alert? __________________ Level of education __________________

1. What day of the week is it?
2. What is the year?
3. What state are we in?

-1/1
-1/1
-1/1

4. Please remember these five objects. I will ask you what they are later.
   Apple       Pen       Tie       House       Car
   ①

5. You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.
   How much did you spend?
   How much do you have left?

①
②

6. Please name as many animals as you can in one minute.
   ① 0-4 animals  ② 5-9 animals  ③ 10-14 animals  ④ 15+ animals

7. What were the five objects I asked you to remember? I point for each one correct.

①
②
③
④
⑤

8. I am going to give you a series of numbers and I would like you to give them to me backwards. For example, if I say 42, you would say 24.
   ① 87 ② 648 ③ 8357

9. This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o’clock.

①
②
③

10. Please place an X in the triangle.

①
②
③

11. I am going to tell you a story. Please listen carefully because afterwards, I’m going to ask you some questions about it.
   Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.

①
②
③

What was the female’s name?
What work did she do?
When did she go back to work?
What state did she live in?

TOTAL SCORE

SCORING

<table>
<thead>
<tr>
<th>High School Education</th>
<th>Less than High School Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>27-30</td>
<td>25-30</td>
</tr>
<tr>
<td>21-26</td>
<td>20-24</td>
</tr>
<tr>
<td>1-19</td>
<td>Dementia</td>
</tr>
</tbody>
</table>

http://medschool.slu.edu/agingsuccessfully/pdfsurveys/slumsexam_05.pdf
St. Louis University Mental State Exam (SLUMS)

• Advantages
  – Sensitivity 1.0 / Specificity 0.98
  – Good for MCI
  – Free

• Disadvantages
  – Test/retest bias
  – May be too complex for office use
  – Has not been extensively studied
Montreal Cognitive Assessment (MoCA)

- [www.mocatest.org](http://www.mocatest.org)
- Includes the CDT and Trails B

Montreal Cognitive Assessment (MoCA)

• Advantages
  – Comes in every flavor
  – Free
  – 3 forms, to reduce test/retest bias
  – Useful for MCI

• Disadvantages
  – Takes 20-30 minutes to administer
  – Not validated in large samples
  – Specificity is very low (35-50%)

Clock Drawing Test

• Advantages
  – Q&D Screen
  – Tests planning, organizing, sequencing, and abstraction in one easy step

• Disadvantages
  – Bazillion different ways to score it
  – Limited to a single cognitive domain

Clock Drawing Test

A
CDT 4
MMSE 30

B
CDT 2
MMSE 20

C
CDT 2
MMSE 19

D
CDT 1
MMSE 14

E
CDT 2
MMSE 19
Mini-Cog

- Brief screen of short-term recall + clock drawing test
- 3-item registration → CDT (informative distraction) → recall
- Scoring

Mini-Cog

• Advantages
  – 3-5 minutes
  – Less affected by ethnicity, language, education than the MMSE
  – Useful for MCI
  – Decent sensitivity and specificity

• Disadvantages
  – May be inappropriate for individuals with very low levels of education or literacy

Mattis Dementia Rating Scale (DRS-2)

- Main domains + subscales:
  - Attention
  - Initiation and Perseveration
  - Constructions
  - Conceptualization
  - Memory

  - Both Verbal & Visual memory and conceptualization

Mattis Dementia Rating Scale (DRS-2)

Fig 2. ROC curves (receiver operating characteristics) for the total and subscales of the DRS.
Mattis Dementia Rating Scale (DRS-2)

• Advantages
  – Sensitivity 78%; Specificity 86% for MCI
  – Ranks participation in cognitive domains by percentiles
  – Comes in Alternate Form to reduce test/retest bias
  – Not all portions rely on language (can test visual recognition memory)

• Disadvantages
  – Takes 20-30 minutes to complete
  – Not free
  – Takes a bit of practice

Trail-Making Test

• Part A
  – Numbers 1 → 25
  – Ave 29 sec

• Part B
  – Numbers + letters
  – 1A → 13M
  – Ave 75 sec

• Advantages
  – Free
  – Often used by DMV

• Disadvantage
  – Difficult for patients to understand at times

www.granddriver.net/data/media/docs/Ulowa_trailMaking.pdf
Neurobehavioral Cognitive Status Exam

- COGNISTAT
- Tests language, constructions, memory, calculations, reasoning
- Now with a web-based version

Neurobehavioral Cognitive Status Exam

• Advantages
  – Good for visual/spatial
  – Good for executive functioning

• Disadvantages
  – Sensitivity better for Attention, Calculations, and Similarities
  – Specificity better for Constructions
  – Has a known ceiling effect (may not be sufficiently challenging)
  – Not free
Blessed Orientation-Memory-Concentration Test

- Condensed version (6 Qs) of the 26-item Information-Memory-Concentration Mental Status Test (IMCMST) devised by Blessed and colleagues

- 6 items:
  - What year is it now?
  - What month is it now?
  - Repeat this phrase after me: John Brown, 42 Market Street, Chicago
  - About what time is it? (within 1 hour)
  - Count backwards 20 to 1
  - Say the months in reverse order
  - Repeat the memory phrase

Blessed Orientation-Memory-Concentration Test

• **Advantages**
  – Sensitive indicator of cognitive impairment
  – Takes 5 minutes
  – Is not affected by poor vision

• **Disadvantages**
  – Does not differentiate between dementia and delirium
  – Ethnicity bias; poor specificity (38% vs. 79%) among African American elders, resulting in higher percentages of false-positive for dementia

Yeo G, Gallagher-Thompson D. Ethnicity and the dementias. 2006. CRC Press
Scales to Assess Behaviors
Neuropsychiatric Inventory (NPI)

• Advantages
  – Measures intensity plus severity
  – Measures many symptom domains
  – There are forms for various settings
    • NH form 1 month, Q form for 1 week

• Disadvantages
  – Lots of questions

Neuropsychiatric Inventory (NPI) scores

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Anytime during illness</th>
<th>Shown in last month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delusions</td>
<td>50%</td>
<td>35%</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>28</td>
<td>20</td>
</tr>
<tr>
<td>Agitation/Aggression</td>
<td>63</td>
<td>52</td>
</tr>
<tr>
<td>Depression</td>
<td>54</td>
<td>45</td>
</tr>
<tr>
<td>Anxiety</td>
<td>50</td>
<td>44</td>
</tr>
<tr>
<td>Apathy</td>
<td>76</td>
<td>75</td>
</tr>
</tbody>
</table>

# Neuropsychiatric Inventory (NPI) scores

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Anytime during illness</th>
<th>Shown in last month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euphoria</td>
<td>17</td>
<td>23</td>
</tr>
<tr>
<td>Irritability</td>
<td>63</td>
<td>55</td>
</tr>
<tr>
<td>Aberrant Motor Behaviors</td>
<td>65</td>
<td>57</td>
</tr>
<tr>
<td>Sleep Disturbance</td>
<td>54</td>
<td>42</td>
</tr>
<tr>
<td>Appetite</td>
<td>64</td>
<td>54</td>
</tr>
</tbody>
</table>

Mini Suffering State Exam (MSSE)

Suffering items

1. Not calm
2. Screams
3. Pain
4. Decubitus ulcers
5. Malnutrition
6. Eating disorders
7. Invasive action
8. Unstable medical condition
9. Suffering according to medical opinion
10. Suffering according to family opinion

## Mini Suffering State Examination

<table>
<thead>
<tr>
<th>1. Not calm</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not calm: this is the 1st significant expression of the expression of the patient without verbal communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. Screams</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Screams: a sign of desperation and call for help that indicates suffering</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. Pain</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pain: though difficult to recognize in end-stage dementia, a practical way is to watch facial expression while percussing, palpating etc</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. Decubitus ulcers</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. Malnutrition</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Malnutrition: as reflected by Tot Protein, Albumin, Cholesterol, Hemoglobin, etc</td>
</tr>
<tr>
<td></td>
<td>6. Eating Disorders</td>
<td>No</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>----</td>
</tr>
<tr>
<td></td>
<td>Eating Disorder: refusal to eat, oropharyngeal dysphagia, anorexia, PEG</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7. Invasive action</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Invasive action: frequent blood tests, intubation, catheterizations, constant fluid transfusions, hemodialysis, mechanical ventilation, etc</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8. Unstable Medical Condition</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Unstable Medical Condition: acute medical status such as pneumonia, urosepsis, electrolyte imbalance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9. Suffering according to medical opinion</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>10. Suffering according to family opinion</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Suffering according to medical opinion: a subjective evaluation of “feeling sick” of the patient which is not a diagnosis, syndrome etc</td>
<td></td>
</tr>
</tbody>
</table>
MSSE score interpretation

• Low level of suffering 0-3
• Intermediate level of suffering 4-6
• High level of suffering 7-10

• High level of agreement on 7 items

• High level of disagreement on “not calm” and “suffering according to physician’s opinion”

The MSSE predicts mortality

Figure 1. Kaplan–Meier 6-month survival curves for end-stage dementia patients in three suffering levels.
Mini Suffering State Exam (MSSE)

• Advantages
  – Quick
  – Free
  – Correlates to survival in End-stage Dementia

• Disadvantage
  – Not well known

Functional Assessment Staging of Alzheimer’s Disease. (FAST)

- Evaluates function at moderate-severe stages of dementia, when cognitive scales are no longer useful
- Uses informants; caregivers, LTC staff, observation
- 7 stages:
  1. normal adult
  2. normal older adult
  3. early dementia
  4. mild dementia
  5. moderate dementia
  6. moderately severe dementia
  7. severe dementia
Functional Assessment Staging of Alzheimer’s Disease. (FAST)

STAGE 6: Moderately Severe Dementia (MMSE = 5)
- Improperly putting on clothes without assistance or cueing
- Unable to bathe properly
- Unable to handle mechanics of toileting
- Urinary incontinence
- Fecal incontinence

STAGE 7: Severe Dementia (MMSE 0)
- Ability to speak limited to ~6 words per day
- Ambulatory ability lost
- Cannot sit up without assistance
- Loss of ability to hold up head independently
- Loss of ability to smile
FAST scoring for Dementia

• 7a < 6 meaningful words/day

• 7b 1 intelligible word in any average day

• 7c unable to walk without assistance
• FAST 7c – if reached in a stepwise fashion, 71% died within 6 months of enrollment

• FAST 7c but not 7a and then 7b, only 30% died within 6 months of enrollment with a median survival time of 10.7 months

• One retrospective study of 11,430 NH patients with Cognitive Performance Score of 5 or 6
  – FAST 7c PPV of only 38.5%, sensitivity of 22% in predicting death < 6 months
Pain Assessment in Advanced Dementia (PAINAD) Scale

<table>
<thead>
<tr>
<th>Breathing (independent of vocalization)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Occasional labored breathing, short period of hyperventilation</td>
</tr>
<tr>
<td>0</td>
<td>Noisy labored breathing, long period of hyperventilation, Cheyne-stokes respirations,</td>
</tr>
<tr>
<td>1</td>
<td>Repeated trouble calling out, loud moaning or groaning, crying</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Negative vocalization</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Occasional moan or groan, low level of speech with a negative or disapproving quality</td>
</tr>
<tr>
<td>1</td>
<td>Repeated trouble calling out, loud moaning or groaning, crying</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facial expression</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smiling or inscrutive</td>
<td>Sad, frightened, frowning</td>
</tr>
<tr>
<td>1</td>
<td>Facial grimacing</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body language</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxed</td>
<td>Tense, distressed pacing, fidgeting</td>
</tr>
<tr>
<td>1</td>
<td>Rigid, fists clenched, knees pulled up, pulling or pushing away, striking out</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Consolability</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>No need to console</td>
<td>Distracted or reassured by voice or touch</td>
</tr>
<tr>
<td>1</td>
<td>Unable to console, distract, or reassure</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Total

Source: Reference 21.

Pain Assessment in Advanced Dementia (PAINAD) Scale

• Advantages
  – Free
  – Training is also free

• Disadvantages
  – Useful for LTC
  – Not so useful for an office practice

The Intensive Care Delirium Screening Checklist - ICDSC

**If patient not comatose/stuporous, then use the checklist

1. Drowsiness
   Mild to moderate stim needed for a response → score = 1
   Normal wakefulness or state where easily aroused → score = 0
   Hypervigilance/Exaggerated response to normal stimulation → score = 1

2. Inattention Difficulty following a conversation or instructions. Easily distracted by external stimuli. Difficulty in shifting focus; score = 1

3. Disorientation Any obvious mistake in time, place or person; score = 1

4. Hallucination-delusion-psychosis The unequivocal clinical manifestation of hallucination or of behavior probably due to hallucinations (e.g. trying to catch a non-existent object) or delusion. Gross impairment in reality testing; score = 1
ICDSC continued

5. Psychomotor agitation or retardation
   Hyperactivity requiring the use of additional sedative drugs or restraints in order to control potential danger to oneself or others (e.g. pulling out IV lines, hitting staff). Hypoactivity or clinically noticeable psychomotor slowing; score = 1

6. Inappropriate speech or mood
   Inappropriate, disorganized, or incoherent speech. Inappropriate display of emotion related to events or situation; score = 1

7. Sleep/wake cycle disturbance
   Sleeping less than 4 hours or waking up frequently at night (do not consider wakefulness initiated by medical staff or loud environment). Sleeping during most of the day; score = 1

8. Symptom fluctuation
   Fluctuation of the manifestation of any item or symptom over 24 hours (e.g. from day shift to night shift); score = 1

Total score (Possible range 0-8)
ICDSC

• Obvious manifestation of an item = 1 point; no manifestation of an item or no assessment possible = 0 point.

• Indicative of likely delirium score ≥4.
EXIT-25

• Advantages
  – Focuses on executive functioning
  – Designed to be administered by non-neuropsychiatrically trained
  – Correlates strongly to Wisconsin Card Sort
  – Correlates to ability to give informed consent

• Disadvantage
  – Takes 15-20 minutes to administer
  – Not as well known

Geriatric Depression Scale

- First depression screen for elderly population
- Developed by researchers at Stanford and the Palo Alto VA who wanted to emphasize differences in depressive symptoms in elders vs. younger patients
- Other depression screens relied too heavily on sleep symptoms and somatic complaints
- Language used in other depression scales led to false conclusions in elders
  - “Looking forward to the future” has a different meaning for elders at the end of their life span than for youngsters
Geriatric Depression Scale

• The GDS’s Yes/No format was better than Zung’s (1965) 4-point scale that required subtle discrimination

• The 30-item scale also posed a respondent burden
  – Shortened to 15-item scale, while still retaining decent psychometrics
  – Now a 5-item screen
    • (If ≥ 3 positive answers, → 15-item version)
GDS Psychometrics

• High internal consistency (the way the items hang together)
  – Split-half reliability coefficient of 0.94

• High test-retest reliability (consistency between clinicians)
  – Correlation of 0.85 (p < 0.001)

• 84% sensitivity and a 95% specificity rate
  – Yes means yes, and no means no
GDS

- Advantages:
  - Comes in 27 flavors
  - FREE

- Disadvantages:
  - Used for screening, not designed for diagnosis
  - Not sensitive to change over time
The Hamilton Rating Scale for Depression (Ham-D)

• Most widely used scale in studies of depression; arguably the Gold Standard

• Emphasizes the somatic manifestations of depression; makes it particularly sensitive to changes experienced by patients who are severely ill
The Hamilton Rating Scale for Depression (Ham-D)

- **Advantages:**
  - Can be administered in 15-20 minutes
  - Contains descriptive anchors for each of the parameters that it measures
  - Useful gauge for treatment response

- **Disadvantages:**
  - Focuses heavily on somatic manifestations of depression → artificially high scores in geriatric patients
Case Studies
Alcoholic Dementia

• Diagnostic Evaluation
  – Motor – cerebellar symptoms
  – Attention – normal
  – Memory – impaired, confabulation
  – Language – relatively preserved
  – Visual/spatial – relatively preserved
  – Affect – relatively preserved
  – Executive – early and progressive
Alzheimer’s Dementia

• Diagnostic Evaluation
  – Motor – impairment in later stages
  – Attention – normal in early stages
  – Memory – difficulty learning new info
  – Language – early impairment, ↓ fluency
  – Visual/spatial – early and progressive problems
  – Affect – apathy, personality change
  – Executive – early and progressive
Frontotemporal Dementias

• Diagnostic Evaluation
  – Motor – apraxic gait
  – Attention – normal
  – Memory – normal in early disease
  – Language - progressive nonfluent aphasia or semantic fluent aphasia
  – Visual/spatial – normal
  – Affect – apathy, disinhibitions, personality change
  – Executive – poor frontal lobe fctn, judgment
Vascular dementia

- Diagnostic Evaluation
  - Motor – balance deficits
  - Attention – impaired tracking
  - Memory – decreased retrieval
  - Language – depends on lesion
  - Visual/spatial – depends on lesion
  - Affect – behavioral changes, depression
  - Executive – prominent abnormality
Dementia with Lewy Bodies

- Diagnostic Evaluation
  - Motor – Parkinsonian, frequent falls
  - Attention – marked fluctuation
  - Memory – delayed retrieval first
  - Language - slowed
  - Visual/spatial – grossly abnormal
  - Perceptual – vivid visual hallucinations
  - Affect – normal
  - Executive – impaired – early
Parkinson’s-related dementia

• Diagnostic Evaluation
  – Motor – tremor, stiffness, gait
  – Attention – normal
  – Memory – slowed
  – Language - slowed
  – Visual/spatial – normal
  – Affect – normal
  – Executive – slowed thought process
Major Depressive Disorder

• Diagnostic Evaluation
  – Motor – slowed, delayed response
  – Attention - impaired (think delirium)
  – Memory – impaired motivation, LTM>STM
  – Language – normal object recognition, repetition
  – Visual/spatial - normal
  – Affect - Sad, hopeless
  – Executive functioning - normal
Delirium

• Diagnostic Evaluation
  – Motor – hyper/hypoactivity
  – Attention – inattention with lucid intervals
  – Perception – visual hallucinations
  – Memory – grossly impaired
  – Language – comprehension impaired
  – Visual/spatial - impaired
  – Affect – labile, fearful
  – Executive functioning – grossly impaired
Subacute Delirium

• Diagnostic Evaluation
  – Motor – mild hyper/hypoactivity
  – Attention – inattention with lucid intervals
  – Perception – unimpaired
  – Memory – impaired
  – Language – unimpaired
  – Visual/spatial - unimpaired
  – Affect – mildly impaired
  – Executive functioning – impaired
Mania

- Diagnostic Evaluation
  - Motor – hyperactivity
  - Attention – severely impaired
  - Perception – likely impaired
  - Memory – severely impaired
  - Language – rapid, loud
  - Visual/spatial - unimpaired
  - Affect – labile
  - Executive functioning – perseveration, severely impaired
Dementia-related Depression

- Diagnostic Evaluation
  - Motor – variable
  - Attention – impaired tracking
  - Memory – decreased
  - Language – variable, often repetitive
  - Visual/spatial – variable
  - Affect – tearfulness, wish to be dead
  - Executive – variable
Assessing Pain in Dementia

- Diagnostic Evaluation
  - PAIN-D

- Q&D screen: *Calling out* is one of the most common indicators of pain in cognitively-impaired elders

- If nothing else is working, consider pain
Suffering in Dementia

- Diagnostic Evaluation
- MSSE – Mini Suffering State Exam
- FAST-AD