Cognitive Screening in Primary Care

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Behavioural Neurology and Neuropsychiatry

Integration of Psychiatry into Primary Health Care_Kuwait_27 Jan 2014
Cognitive Screening

● Objectives
  ● Review the principles and practice of dementia assessments
  ● Discuss barriers to assessment of dementia in primary care
  ● Explore assessment tools that are useful in primary care populations
Dementia Diagnosis

- Development of multiple cognitive deficits
  - Memory impairment and
  - One or more of:
    - Aphasia
    - Apraxia
    - Agnosia
    - Executive functioning
- Functional impairment and a decline from previous functioning
- Gradual onset, continuing course
- Not due to other medical conditions or drugs
Types of Dementia

Dementia is an “Umbrella term”, referring to many different types of dementia.

The most common type of dementia is Alzheimer's Disease (illustrated as the handle of this umbrella).

Each of the lesser common types of dementia, such as Vascular, Lewy Body, Frontoтемporal, etc., is illustrated as a separate section of the umbrella.

Mixed Dementia: Overlap of Alzheimer Disease with Other Dementias

- Alzheimer's 60-70%
- Vascular dementia 10-20%
- Lewy body dementia 15-25%
Alzheimer’s Dementia

- Alzheimer’s Disease
  NINCDS-ADRDA
  - Dementia established clinically + cog testing
  - Progressive worsening of cog domains
  - No disturbance of consciousness
  - Not due to other brain/systemic illness
- Supportive features
  - Altered behavioural patterns
  - FH of similar illness

Differential Diagnosis

- Vascular Dementia
  - Abrupt or step-wise
- Mixed
- Lewy Body
  - Fluctuations, hallucinations, Parkinson sx
- Parkinsons Dementia
- FTLD
  - Early, insidious, gradual
  - Personality change or apathy
  - Behaviour and/or language
- Mild Cognitive Impairment
Alzheimer’s Dementia
Vascular Dementia
Epidemiology

- Age 65-74: 1%
- Age 75-84: 6.9%
- Age 85+: 26%

Canadian Study of Health and Aging

Figure 1: Projected prevalence of all dementias, Alzheimer disease and vascular dementia in Canada.2-3
Cognitive Screening

● Advantages
  ● Diagnosis can help explain changes in behaviour, mood, cognition and function
  ● Allow caregivers to plan for POAs, end of life care
  ● Earlier benefit from medication

● Disadvantages
  ● False positives
  ● Overwhelm health care system
Who to screen...

- Opportunistic case finding
- High risk individuals
  - Late-onset depression, anxiety or psychosis
  - Subjective cognitive impairment
  - Age greater than 75
  - Functional decline
- In superficial conversation, even impaired patients can appear cognitively intact
- Screening doesn’t necessarily equate with diagnosis of dementia
Who else to screen...

- Caregiver / Family member
  - This is essential!!!!
  - A common cause of diagnostic error is to ignore the family
  - In early AD, patients deny symptoms
  - Patients may not be aware of safety issues
What else to screen for...

- Mood and behaviour
- 97% of people with AD will have at least 1 neuropsychiatric symptom in the first 5.3 years of their illness
- Neuropsychiatric symptoms are associated with faster cognitive decline, higher rates of hospitalization and institutionalization and greater caregiver burnout
Current screening practices

- Specialists
  - MMSE and its variants 100%
  - CDT 72%
  - Delayed word recall 56%
  - Verbal fluency 35%
  - Similarities 27%
  - Trail making 25%

Current screening practices

- MMSE 76%
- DWR 56%
- CDT 53%
- AS 13%
- MoCA 5%

Current Screening Practices

- CDT 93%
- MMSE 91%
- MoCA 80%
- DWR 75%
- TM 44%

Ismail et al 2013 Canadian Geriatrics Journal
Brief cognitive screening instruments: an update

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2Department of Psychiatry, Faculty of Medicine, University of Calgary
3Department of Psychiatry, Faculty of Medicine, University of Toronto, Sunnybrook Health Sciences Centre, Canada

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1Assistant Professor at Department of Psychiatry, Faculty of Medicine, University of Toronto, Canada and also Head of Centre for Addiction and Mental Health Memory Clinic, Canada.
2Fellow.
3Professor and Lower Chair in Geriatric Psychiatry.

Objective: To review the recent literature on cognitive screening with a focus on brief screening methods in primary care as well as geriatric services.

Design: The Medline search engine was utilized using the keyword search terms ‘cognitive screening’, ‘cognitive assessment’, and ‘dementia screening’ limiting articles to those published in English since 1998.

Results: 679 abstracts were retrieved. Articles focusing on attitudes toward cognitive screening, current screening practices, promising new instruments and more recent updates contributing significant information on established instruments were retrieved and incorporated into this review. Reference lists were reviewed for relevant contributing articles. Instruments recommended from previous reviews of cognitive screening and those identified in surveys as most frequently used in primary care and geriatric settings were emphasized in this review.

Conclusions: Dementia remains under-diagnosed in the elderly population. Despite significant limitations, the Mini Mental State Exam remains the most frequently used cognitive screening instrument. Its best value in the community and primary care appears to be for the purpose of ruling out a diagnosis of dementia. Instruments such as the Mini-Cog, Memory Impairment Screen (MIS), and the General Practitioner Assessment of Cognition (GPCOG) have consistently been recognized for utility in primary care. The clock drawing test (CDT) and newer instruments such as the Montreal Cognitive Assessment (MoCA) and the Rowland Universal Dementia Assessment Scale (RUDAS) are gaining credibility due to improvements in sensitivity, addressing frontal executive functioning, and decreasing susceptibility to cultural and educational biases. Copyright © 2009 John Wiley & Sons, Ltd.

Keywords: dementia screening, Alzheimer’s disease, cognitive screening, cognitive assessment, dementia screening.

History: Received 21 January 2009; Accepted 26 March 2009; Published online 6 July 2009 in Wiley InterScience (www.interscience.wiley.com).

DOI: 10.1002/gps.2306

Introduction

Cognitive screening is a means to early detection of dementia, which carries a number of important benefits. A firm diagnosis of dementia helps to provide an explanation to patients and families regarding recent changes in instrumental activities of daily living, behavior, intellectual functioning, and mood. Once the diagnosis is established, patient and family can plan for important issues including powers of attorney for property and personal care, living wills for end of life care, planning for long-term care, and the preparation...
Scales administered to patient...
Ideal screening test

1. Brief in duration
2. Acceptable to patients
3. Insensitive to confounding factors such as culture, language and education
4. Simple to administer and score
5. Sensitivity and inter-rater reliability
6. Cover a broad range of cognitive functions
“No ifs ands or buts…”
**MMSE**

<table>
<thead>
<tr>
<th>Question</th>
<th>Maximum Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orientation</strong></td>
<td>One point for each correct answer, maximum of five. One point for each correct answer, maximum of five.</td>
</tr>
<tr>
<td><strong>Registration</strong></td>
<td>One point each correct answer, maximum of three</td>
</tr>
<tr>
<td><strong>Attention and Calculation</strong></td>
<td>One point for each correct answer, maximum of five</td>
</tr>
<tr>
<td><strong>Recalls</strong></td>
<td>One point for each correct answer, maximum of three</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>One point for each correct answer, maximum of two</td>
</tr>
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**Mini Mental Score**

<table>
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</tr>
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<tbody>
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<td></td>
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<tr>
<td>5. Language</td>
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</table>
Foreign Language MMSE

Afrikaans
Arabic
Argentinean Spanish
Austrian German
Belgian Dutch
Belgian French
Bosnian
Brazilian Portuguese
Bulgarian
Chilean Spanish
Chinese
Croatian
Czech
Danish
Dutch
Estonian
Farsi
Filipino
Finnish
French
German
Greek
Gujarati
Hebrew
Hindi
Hungarian
Indian English

Israeli English
Italian
Japanese
Kannada
Korean
Latvian
Lithuanian
Macedonian
Malay
Malayalam
Marathi
Norwegian
Polish
Portuguese
Romanian
Russian
Russian for Estonia
Serbian
Slovakian
Slovenian
South African English
Spanish
Swedish
Tamil
Telugu
Turkish
UK English
Ukrainian
Urdu
Problems with the MMSE

- Poor assessment of frontal / exec function
- Designed in an English speaking population
- MMSE scores are influenced by age, education, ethnicity, and language of interview
- Some words can’t be translated and some concepts are not relevant to other cultures
- Excluding items that were culturally biased, resolved inter-ethnic diff in “severe” dementia
MMSE bias

- Sao Paolo Ageing & Health Study
  - High false positive rate of dementia diagnosis in older illiterate adults
  - Recommend cutoff score of 14/15 for diagnosis in those with no formal education
  - Cutoff of 17/18 for those with >1 year
  - MMSE grossly overestimates dementia (vs DSM criteria) in this population

MMSE development

- Napkin (serviette)
CPS SCORING RULES

Impairment Count
(Number of the following):
- Decision Making: Not Independent=1-2
- Understood: Not Independent=1-3
- Short-Term Memory: Not OK=1

Severe Impairment Count
(Number of the following):
- Decision Making: Mod. Impaired=2
- Understood: Sometimes/Never=2-3

Decision-Making

Coma?
Yes (1)
No (0)

Severely Impaired (3)

Not Severely Impaired (0-2)

Impairment Count?
0
1
2 or 3

Severe Impairment Count
0
1
2

Average mini mental score in field trial where 30 is best and 0 is worst
(0) Intact 24.9
(1) Borderline Intact 21.9
(2) Mild Impairment 19.2
(3) Moderate Impairment 15.4
(4) Mod. Severe Impairment 6.9
(5) Severe Impairment 5.1
(6) Very Severe Impairment 0.4

QUICK GUIDE TO THE SCORING RULES
MDS COGNITIVE PERFORMANCE SCALE

Five MDS items are used in assigning residents to one of seven CPS categories. The CPS categories are highly related to residents’ average scores on the Folstein Mini-Mental Status Examination (MMSE), which has a score range of zero (worst) to thirty (best). According to Folstein, an MMSE score of 23 or lower usually suggests cognitive impairment but it may be lower for persons with a eighth grade education or less.

**All Residents**

**COMA?**
- Yes → 5 Very Severe Impairment
- No

**DECISION-MAKING?**
- Yes → EATING? (Qask #4)
- No

**EATING?**
- Yes
  - Count = 2 → 5 Severe Impairment
  - Count ≤ 1 → 4 Moderate Severe Impairment
- No

**IMPAIRMENT COUNT?**
- Yes
  - Count = 0 → 3 Moderate Impairment
  - Count ≥ 2 → 2 Mild Impairment
- No

**IMPAIRMENT COUNT?**
- Yes → 1 Borderline
- No

**IMPAIRMENT COUNT?**
- Yes → 0 Intact
- No

To calculate the CPS Score, code the 5 required MDS items, then determine impairment and severe impairment counts.

**REQUIRED MDS ITEMS**
- B1: Coma
- B2s: Short-Term Memory
- B4: Decision-Making

**TOTAL IMPAIRMENT COUNT**
- Count 1 point for each of the following scores:
  - Decision-Making: Not Independent (B4 = 1, 2)
  - Unoriented: Usually / Sometimes / Never (C4 = 1, 2, 3)

**TOTAL SEVERE IMPAIRMENT COUNT**
- Count 1 point for each of the following scores:
  - Decision-Making: Moderately Impaired (B4 = 2)
  - Unoriented: Sometimes / Never (C4 = 2, 3)
Clock Drawing Test

- “This is a clock face. Please fill in the numbers and then set the time to 10 past 11”
Sensitivity to Deterioration in Dementia

Examples of Clock Drawing Test

Early Alzheimer’s Disease

Moderate Alzheimer’s Disease

Severe Alzheimer’s Disease
CDT

- Many scoring systems, most of which have good psychometric properties
- 1 minute to perform
- Provides a visual (and thus tangible) example for family and caregivers
- Much less susceptible to bias due to education, language and culture
Mini-Cog

Min-Cog scoring algorithm. (Reproduced from Borson et al, 2000, with permission from John Wiley & Sons Ltd.)

## Instructions for Administration of the Mini-Cog™

### Administration

1. **Three Word Recall**
   - Get patient’s attention.
   - Say: “I am going to say three words that I want you to remember. The words are (select from word list). “Please say them for me now.” If patient is unable to repeat after 3 tries, then go to clock drawing test.

2. **Clock Drawing Test (CDT)**
   - Say in order: “Please draw a clock. Start by drawing a large circle.” (when done, say) “Put all the numbers in the circle.” (when done, say) “Now set the hands to show 11:10 (10 past 11) or 8:20 or 1:45.

3. **Say:** “What were the three words I asked you to remember?

### Special Instructions

- The following word lists have been used in one or more clinical studies:
  - **Version 1**: Banana, Sunrise, Chair
  - **Version 2**: Daughter, Heaven, Mountain
  - **Version 3**: Village, Kitchen, Baby
  - **Version 4**: River, Nation, Finger
  - **Version 5**: Captain, Garden, Picture
  - **Version 6**: Leader, Season, Table

- A clock should not be visible to the patient during this task.
- Use either a blank piece of paper and have patient draw circle OR provide a preprinted circle — administration would then be to ask the patient to put in all the numbers like the face of a clock.
- Repeat instructions as needed. This is not a memory test. Move to next step if clock is not complete within 3 minutes.
- Inability or refusal to draw a clock is scored abnormal (0 points).

### Scoring

<table>
<thead>
<tr>
<th>Word recall (0-3 points)</th>
<th>1 point for each word spontaneously recalled without cueing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clock draw (0 or 2 points)</td>
<td>Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (eg, with 12, 3, 6, and 9 in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10) or the 8 and 4 (8:20) or 1 and 9 (1:45). (Length of hands less important).</td>
</tr>
<tr>
<td>Total (0-5 points)</td>
<td>Total score = word recall score + clock score</td>
</tr>
</tbody>
</table>

### References/Copyright Information


Mini-Cog™ Copyright S. Borson. All rights reserved. Used with permission of the author in educational and clinical materials developed by the Alzheimer’s Association.
Mini Cog

- Community sample of culturally, linguistically and educationally heterogeneous older adults
  - Mini-Cog had a sensitivity of 99% and correctly classified 96% of the subjects in the initial study of 249 subjects. Administration time was 3 minutes.

- Mini-Cog was found to be equal or better than the MMSE in detecting dementia in multiethnic elderly individuals, easier to administer to non-English speakers, and is less biased by low education and literacy

**RUDAS – a culturally sensitive tool**

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**RUDAS**

The Riverdale Universal Dementia Assessment Scale: A Multicultural Cognitive Assessment Scale.

- **Memory**
  - Instructions: I want you to imagine that we are going shopping. Here is a list of grocery items. I would like you to remember the following items which we need to get from the shop. When we get to the shop in about 5 mins, I will ask you what it is that we have to buy. You must remember the list for me.
  - **Tea**, **Cooking Oil**, **Eggs**, **Soup**
  - Please repeat this list for me (ask person to repeat the list 3 times). If person did not repeat all four words, report the list until the person has learned them and can repeat them, or, up to a maximum of five times.

<table>
<thead>
<tr>
<th>Item</th>
<th>Max Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tea</strong></td>
<td>...2</td>
</tr>
<tr>
<td><strong>Cooking Oil</strong></td>
<td>...2</td>
</tr>
<tr>
<td><strong>Eggs</strong></td>
<td>...2</td>
</tr>
<tr>
<td><strong>Soup</strong></td>
<td>...2</td>
</tr>
</tbody>
</table>

**Visuospatial Orientation**

- I am going to ask you to identify different parts of the body. (Correct = 1). Once the person correctly answers 3 parts of this question, do not continue as the maximum score is 3.

| (1) show me your right foot | ...1 |
| (2) show me your left hand | ...1 |
| (3) with your right hand touch your left shoulder | ...1 |
| (4) with your left hand touch your right ear | ...1 |
| (5) which is (indicate) pointing to my left knee | ...1 |
| (6) which is (indicate) pointing to my right knee | ...1 |
| (7) with your right hand indicate to my left eye | ...1 |
| (8) with your left hand indicate to my left foot | ...1 |

**Praxis**

- I am going to show you an action and you have to repeat what I do. I want you to watch me and copy what I do.
- Copy me when I do this... (One hand in fist, the other palm down at table, alternate simultaneously.) How do it with me. Now I would like you to keep doing this action at this pace until I tell you to stop—approximately 15 seconds. (Demonstrate at normal walking pace).

- **Normal**
  - 2 (very few if any errors; self-corrected; progressively better; good maintenance; only very slight lack of symmetry, between hands)
  - **Partially Adequate**
    - 1 (some errors do self-correct; some attempt to self-correct; some attempt at maintenance; poor symmetry)
  - **Failed**
    - 0 (cannot do the task; no maintenance; no attempt whatsoever)

**Visuconstructional Drawing**

- Draw the picture exactly as it looks to you (Show cube on back of page). (Yes = 1)

<table>
<thead>
<tr>
<th>Score</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Has person drawn a picture based on a square</td>
<td>...1</td>
</tr>
<tr>
<td>(2) Do all internal lines appear in person’s drawing?</td>
<td>...1</td>
</tr>
<tr>
<td>(3) Do all external lines appear in person’s drawing?</td>
<td>...3</td>
</tr>
</tbody>
</table>

**Judgment**

- You are standing on the side of a busy street. There is no pedestrian crossing and no traffic lights. Tell me what you would do to get across the opposite side of the road safely. (If person gives inappropriate response that does not address both parts of answer, use prompt: “Is there anything else you would do?”)

**Memory Recall**

- **(Recall)** We have just arrived at the shop. Can you remember the list of groceries we need to buy? (Prompt: If person cannot recall any of the list, say: “The first one was ‘tea’.”) (Score points each for any item recalled which was not prompted—use only ‘tea’ as a prompt.)

<table>
<thead>
<tr>
<th>Item</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tea</td>
<td>...2</td>
</tr>
<tr>
<td>Cooking Oil</td>
<td>...2</td>
</tr>
<tr>
<td>Eggs</td>
<td>...2</td>
</tr>
<tr>
<td>Soup</td>
<td>...2</td>
</tr>
</tbody>
</table>

**TOTAL SCORE**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total</td>
<td>8</td>
</tr>
</tbody>
</table>

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Rowland Universal Dementia Assessment Scale (RUDAS)

- Developed specifically for a multicultural population
- Item development
  - Identify important cognitive domains
  - Propose potential items to measure cognition in each of the domains
  - Optimize the psychometric validity, and cultural and linguistic equivalents of the proposed items
  - Develop a full list of items to test in a culturally heterogeneous population
Montreal Cognitive Assessment (MoCA)

- For detecting MCI
- Has multiple cognitive domains
- Frontal and executive functions well represented
SIMARD MD
Screen for the Identification of the Cognitively Impaired Medically At-Risk Driver A Modification of the DemTest1
Dobbs B Schopflocher (2010)

ADMINISTRATION INSTRUCTIONS
The test consists of 4 separate tasks: 2 memory tasks for words; a number conversion task in which numbers have to be converted into words; and a verbal fluency task in which the patient has one minute to name objects that can be bought in a supermarket.

WORD LIST (Immediate Recall)
"Do not indicate in any way there will be a delayed recall component later in the test."
The examiner instructs the patient: "I will now slowly read you a list of 10 words. When I have finished, please repeat as many of these words as possible. The order does not matter."
- Check off each word that the patient recalls
- Prompts (if necessary): "Tell me as many of those words as you can please."
- "Can you recall any more?"
The examiner then gives the patient the following instructions. "Thank you. Now I will read you the same words again. Again, please repeat as many of these words as possible when I have finished."
- Check off each word that the patient recalls
- Again, provide prompts, as necessary, as listed above
SCORING: No score is awarded; however, the immediate recall component of the word list is necessary for the delayed recall component of the SIMARD MD (i.e., Repeat of the Word List).

NUMBER CONVERSION
Give the reverse side of the testing form to the patient for completion.
Show the patient the example at the top of the page. Say to the patient: "As you can see from this example, we can write the number '5' as the word five. The test is like writing not a choir. Please write the numbers in words."
SCORING: Each correct conversion scores one point. Any wrong spelling mistakes (e.g., humed, sevety) are marked as correct. No marks will be awarded for any other conversion mistakes such as the wrong number system (e.g., 206 = 2 hundred) or omissions (e.g., 206 = two hundred) [Maximum of 2 points].

SUPERMARKET TASK
Say to the patient: "Please name as many things as possible that you can buy in a supermarket. You have one minute to do this. Are you ready? Please begin." Please time the minute exactly (a wristwatch with a second hand is sufficient).
SCORING: Give one point for each object named [Maximum of 30 points].

REPEAT OF THE WORD LIST (Delayed Recall)
Say to the patient: "At the beginning of this test I read you 10 words. Tell me as many of those words as you can please."
(May give prompts as in word list task above.)
SCORING: Give one point for each word that the patient recalls [maximum of 10 points].

INTERPRETATION
See scoring guide at the bottom of the testing form to calculate the SIMARD MD total score.
A total score of 38:
High probability of failing a driving assessment.
A total score of 31-77:
Referral for a driving assessment recommended.
A total score of > 70:
Low probability of failing a driving assessment.

1Scoring guide from the DemTest (Phelps et al., 1994) and used with permission. Selection of items and scoring system based on research using driving evaluation outcomes as the criterion.
## Depression

### Geriatric Depression Scale (Short Form)

**Instructions:** Choose the best answer for how you felt over the past week.

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Are you basically satisfied with your life?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Have you dropped many of your activities and interests?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Do you feel that your life is empty?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Do you often get bored?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Are you in good spirits most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Are you afraid that something bad is going to happen to you?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Do you feel happy most of the time?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Do you often feel helpless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Do you prefer to stay at home, rather than going out and doing new things?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Do you feel you have more problems with memory than most?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Do you think it is wonderful to be alive?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Do you feel pretty worthless the way you are now?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Do you feel full of energy?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Do you feel that your situation is hopeless?</td>
<td>YES / NO</td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Do you think that most people are better off than you are?</td>
<td>YES / NO</td>
<td></td>
</tr>
</tbody>
</table>

**Scoring:**

Assign one point for each of these answers:

1. 4. YES 7. NO 10. YES 13. NO
2. YES 5. NO 8. YES 11. NO 14. YES
3. YES 6. YES 9. YES 12. YES 15. YES

A score of 0 to 5 is normal. A score above 5 suggests depression.

**Source:**


---

### PATIENT QUESTIONNAIRE – PHQ-9

**Patient Name:** ____________________________________________  **MRN** __________________

**Physician:** ____________________________________________  **Date:** __________

Over the last **2 weeks**, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Little interest or pleasure in doing things.
2. Feeling down, depressed, or hopeless.
3. Trouble falling/staying asleep, sleep too much.
4. Feeling tired or having little energy.
5. Poor appetite or overeating.
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down.
7. Trouble concentrating on things, such as reading the newspaper or watching television.
8. Moving or speaking so slowly that other people could have noticed. Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual.
9. Thoughts that you would be better off dead or of hurting yourself in some way.

**Scoring:**

A. How difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all
- Somewhat difficult
- Very difficult
- Extremely difficult

B. In the past **two years** have you felt depressed or sad most days, even if you felt okay sometimes?

- Yes
- No

**Symptoms** __________  **Severity Score** __________
Scales given to caregiver

**CAREGIVER BURDEN STATISTICS**

- **87%** of people with AD are taken care of at home by family members
- **60%** of caregivers are women
- **50%+** of caregivers are children
- **11%** of caregivers are grandchildren
- **6%** of caregivers are spouses
- **48** is the average age of caregivers
- **250,000** American children aged 8-18 provide unpaid care for someone with AD
**IQCODE**

Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)

Now we want you to remember what your friend or relative was like 10 years ago and to compare it with what he/she is like now. 10 years ago was in 19... Below are situations where this person has to use his/her memory or intelligence and we want you to indicate whether this has improved, stayed the same, or got worse in that situation over the past 10 years. Note the importance of comparing his/her present performance with 10 years ago. So if 10 years ago this person always forget where he/she had left things, and he/she still does, then this would be considered hasn't changed much. Please indicate the changes you have observed by circling the appropriate answer:

Compared with 10 years ago how is this person at:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Recognizing the faces of family and friends</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>2. Remembering the names of family and friends</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>3. Remembering things about family and friends e.g. occupations, birthdays, addresses</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>4. Remembering things that have happened recently</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>5. Recalling conversations a few days later</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>6. Forgetting what he/she wanted to say in the middle of a conversation</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>7. Remembering his/her address and telephone number</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>8. Remembering what day and month it is</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>9. Remembering where things are usually kept</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
<tr>
<td>10. Remembering where to find things which have been put in a different place from usual</td>
<td>Much improved</td>
<td>A bit improved</td>
<td>Not much changed</td>
<td>A bit improved</td>
<td>Much worse</td>
</tr>
</tbody>
</table>

- Asks caregiver to compare current cognition to cognition 10 years ago
- Multiple domains
### SAGE

**Patient Name:** __________________________

**Date completed:** 20________

**Completed by:** [ ] Participant

- [ ] Other person

**Relationship to participant:** ____________

**Activity**

Over the past month, how much difficulty have you had with the following:

<table>
<thead>
<tr>
<th>Level of Difficulty</th>
<th>Never performed/Do not need to perform</th>
<th>Severe/stopped due to difficulty</th>
<th>Moderate</th>
<th>Mild</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Keeping your attention or 'train of thought' during a conversation?</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>2. Remembering things that happened a few days before? (e.g., conversation, people visiting)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>3. Playing a game or reading a book that requires concentration? (e.g., games: crosswords, checkers, chess)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>4. Ability to switch between things that are happening at the same time? (e.g., making tea and talking to someone)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>5. Finding your way around a new building? (e.g., hospital/clinic)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>6. Organizing a sip or social activities? (e.g., vacations or family occasion) (score the activity that the person finds to be the more difficult of the two)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>7. Doing your own laundry or shopping? (score the activity that the person finds to be the more difficult of the two)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>8. Organizing and taking your medications?</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>9. Preparing a meal and/or doing laundry? (score the activity that the person finds to be the more difficult of the two)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>10. a) Driving If you do not drive, please answer question b)</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
<tr>
<td>10. b) Using public transportation?</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>

- **Broad based functional assessment**
- **Asks about cognition, ADLs, IADLs and major medical comorbidities**
Lawton IADL Scale

- IADLs
- Patients may deny many of these issues and caregiver can provide a better history

### Instrumental Activities of Daily Living

<table>
<thead>
<tr>
<th>Activity</th>
<th>Guidelines for assessment</th>
</tr>
</thead>
</table>
| Using telephone   | I = Able to look up numbers, dial telephone, and receive and make calls without help  
|                   | A = Able to answer telephone or dial operator in an emergency, but needs special telephone or help to get phone numbers and/or dialing  
|                   | D = Unable to use telephone |
| Traveling         | I = Able to drive own car or to travel alone or in a bus or by taxi  
|                   | A = Able to travel, but needs someone to travel with  
|                   | D = Unable to travel |
| Shopping          | I = Able to take care of all food and clothes shopping with transportation provided  
|                   | A = Able to shop, but needs someone to shop with  
|                   | D = Unable to shop |
| Preparing meals   | I = Able to plan and cook full meals  
|                   | A = Able to prepare light foods, but unable to cook full meals alone  
|                   | D = Unable to prepare any meals |
| Housework         | I = Able to do heavy housework (i.e., scrub floors)  
|                   | A = Able to do light housework, but needs help with heavy tasks  
|                   | D = Unable to do any housework |
| Taking medicine   | I = Able to prepare and take medications in the right dose at the right time  
|                   | A = Able to take medications, but needs reminding or someone to prepare them  
|                   | D = Unable to take medications |
| Managing money    | I = Able to manage buying needs (i.e., write checks, pay bills)  
|                   | A = Able to manage daily buying needs, but needs help managing checkbook and/or paying bills  
|                   | D = Unable to handle money |

FIGURE 2. Instrumental Activities of Daily Living scale. This instrument evaluates the patient's ability to perform the more complex activities that are necessary for optimal independent functioning.

Neuropsychiatric Interview

| Name of patient: __________________________ | Date: ____________ |
| Informant: Spouse | Child | Other: ____________________ |

Please answer the following questions based on changes that have occurred since the patient first began to experience memory problems. Circle “yes” only if the symptom has been present in the past month. Otherwise, circle “no”.

For each item marked “yes”, rate the severity of the symptom (how it affects the patient):

1 = Mild (noticable, but not a significant change)
2 = Moderate (significant, but not a dramatic change)
3 = Severe (very marked or prominent; a dramatic change)

Rate the distress you experience because of that symptom (how it affects you):

0 = Not distressing at all
1 = Minimal (slightly distressing, not a problem to cope with)
2 = Mild (not very distressing, generally easy to cope with)
3 = Moderate (fairly distressing, not always easy to cope with)
4 = Severe (very distressing, difficult to cope with)
5 = Extreme or very severe (extremely distressing, unable to cope with)

Long version NPI is frequency x severity scale

- NPI-Q
- Yes or No
- Rate severity of Yes symptoms as mild, moderate or severe
- Long version NPI is frequency x severity scale
## Frontal Behavioral Inventory

### Negative Behavior Questions:

1. **Apathy:** Has s/he lost interest in friends or daily activities or is s/he interested in seeing people or doing things?  
   - 0     1     2     3

2. **Asperplasticity:** Does s/he start things on his/her own, or does s/he have to be asked?  
   - 0     1     2     3

3. **Indifference, Emotional Flatness:** Does s/he respond to occasions of joy or sadness as much as ever, or has s/he lost emotional responsiveness?  
   - 0     1     2     3

4. **Inflexibility:** Can s/he change his/her mind with reason or does s/he appear stubborn or rigid in thinking lately?  
   - 0     1     2     3

5. **Personal Neglect:** Does s/he take as much care of his/her personal hygiene and appearance as usual, or does s/he neglect to wash or change his/her underwear?  
   - 0     1     2     3

6. **Disorganization:** Can s/he plan and organize complex activity or is s/he easily distracted, impertinent, or unable to complete a job?  
   - 0     1     2     3

7. **Instability:** Does s/he pay attention to what is going on or does s/he seem to lose track or not follow at all?  
   - 0     1     2     3

8. **Lack of Insight:** Is s/he aware of any problems or changes in behavior, or does s/he seem unaware of them or deny them when discussed?  
   - 0     1     2     3

9. **Logopenia:** Is s/he as talkative as before or has the amount of speech significantly decreased?  
   - 0     1     2     3

10. **Semantic Dementia:** Does s/he ask what words mean, has trouble comprehending words, and/or objects, or does s/he know the meaning of words?  
    - 0     1     2     3

11. **Aphasia and Verbal Apraxia:** Does s/he make language or pronunciation errors or has s/he developed mumbling or repeating sounds recently?  
    - 0     1     2     3

12. **Alien Hand and/or Apraxia:** Has s/he developed clumsiness, stiff hand, inability to use utensils or appliances, or does a hand interfere with the other, or behaves as if it did not belong, or can s/he use both hands as before?  
    - 0     1     2     3

### Disinhibition Questions:

13. **Perseveration, Obsession:** Does s/he repeat or perseverate actions or remarks? Are there any obsessive routines or behaviors, or has s/he always been a creature of habit?  
    - 0     1     2     3

14. **Irritability:** Has s/he been irritable, short-tempered, or is s/he reacting to stress or frustration in a way that is not always?  
    - 0     1     2     3

15. **Excessive Jocularity:** Has s/he been making jokes excessively or offensively or at the wrong time, or has s/he always had a jocular manner or a quirky sense of humor?  
    - 0     1     2     3

16. **Impulsivity/Poor Judgment:** Has s/he been using good judgment in decisions, spending or driving, or has s/he acted impulsively, irresponsibly, negligently or in poor judgment?  
    - 0     1     2     3

17. **Hoarding:** Has s/he started to hoard objects or money excessively or has her/his saving habits remained unchanged?  
    - 0     1     2     3

18. **Inappropriateness:** Has s/he kept social rules or has s/he said or done things outside what are acceptable? Has s/he been rude, or childish?  
    - 0     1     2     3

19. **Restlessness/Roaming:** Has s/he been pacing, walking, driving excessively or is the activity level normal?  
    - 0     1     2     3

20. **Aggression:** Has s/he shown aggression, or shouted at anyone or hurt anyone physically or is there no change in this respect?  
    - 0     1     2     3

21. **Hyperactivity:** Has s/he been thinking or eating excessively anything or hurt anyone physically or has s/he always had a large appetite?  
    - 0     1     2     3

22. **Hypersexuality:** Has sexual behavior been unusual or excessive? This could include remarks or unbecoming, or is there no change in this respect?  
    - 0     1     2     3

23. **Utilization Behavior:** Does s/he seem to need to touch, feel, examine, or pick up objects within reach and sight, or can s/he keep his/her hands to himself?  
    - 0     1     2     3

24. **Incontinence:** Has s/he wet or soiled his/her bottom or does s/he have problems that can be explained by urinary infection or childbirth/prostate?  
    - 0     1     2     3
Caregiver Burden Scale

- Identify at-risk caregivers
- Can refer to caregiver support groups
- Attending to caregiver an prevent ER visits
Summary

- Opportunistic case finding
- Includes both patient and caregiver
- Be aware of premorbid cognitive abilities and pay attention to changes over time
- Be aware of language, education and cultural bias in screening
- Don’t forget neuropsychiatric symptoms
- Cognitive screening is just one part of a thorough dementia work up