IS IT DEMENTIA, DELIRIUM OR DEPRESSION?

GLENISE MCKENZIE, PhD, RN, ASSOCIATE PROFESSOR, SCHOOL OF NURSING, ASSOCIATE DIRECTOR HARTFORD CENTER FOR EXCELLENCE
OREGON HEALTH & SCIENCE UNIVERSITY
GOALS OF PRESENTATION

Participants will be able to:
- Recognize **risk factors** for delirium, dementia, and depression in older adults
- **Differentiate** between delirium, dementia, and depression in older adults
- Recognize the utility of common practice **tools** for screening patients for delirium, dementia, and depression

Slides adapted in part from: A Learning Module for Effective Social Work Practice with Older Adults Dr. Robin P. Bonifas, MSW, PhD Arizona State University, School of Social Work
The 3 D’s

- Dementia
- Cognitive Impairment
- Delirium
- Depression
Depression in Older Adults

Prevalence of Late-Life Depression

Clinically significant depressive symptoms
- 15% community
- 25% primary care
- 25% medical inpatients
- 40% nursing home

Major depressive disorder
- 1-3% community
- 10% primary care
- 15% medical inpatients
- 15% nursing home
OUTCOMES OF UNTREATED DEPRESSION

- Increased morbidity and mortality
- Increase substance abuse
- Slow recovery from illness/surgery/accidents
- Malnutrition
- Social Isolation
- Suicide
OUTCOMES OF UNTREATED DEPRESSION

SUICIDE
Associated with:
- personal loss
- death of loved ones
- social isolation
- medical conditions associated with pain

Figure 1: Suicide Rates USA 2010 (Centers for Disease Control and Prevention, 2013)
DEPRESSION: “SIG-E-CAPS”

- S Sleep disturbance (insomnia or hypersomnia)
- I Interests (anhedonia or loss of interest in usually pleasurable activities)
- G Guilt and/or low self-esteem
- E Energy (loss of energy, low energy, or fatigue)
- C Concentration (poor concentration, forgetful)
- A Appetite changes (loss of appetite or increased appetite)
- P Psychomotor changes (agitation or slowing/retardation)
- S Suicide (morbid or suicidal ideation)
**Late-Life Depression Symptoms**

Generally have symptoms similar to adults...and...

- Report more somatic or physical complaints (GI most frequent)
- More likely to accept “unhappiness”
- Irritability more common
- Fatigue or Loss of Energy (challenging in combination with chronic conditions)
- Poor concentration/memory
DEPRESSION: HIGHER RISK

- Cognitive impairment
- Female sex
- Unmarried status
- Stressful life events/recent loss
- Absence of social support
- Current alcohol/substance abuse
- Functional disability
- New medical diagnoses
- Poor health status
Review of Sensitivity and Specificity

True positives: 80/100 = 0.8
False negatives: 20/100 = 0.2

Sensitivity = 0.8
Specificity = 0.6

True negatives: 60/100 = 0.6
False positives: 40/100 = 0.4

DEPRESSION SCREENING

- Geriatric Depression Scale-Short Form (GDS-SF) – relies on mood versus somatic –
  - 92% Sens & 81% Spec (for MDD in PC)

- Patient Health Questionnaire (PHQ-9)
  - Sens 93% & Spec 97%

- Cornell Scale for Depression in Dementia (CSDD) includes observer questions
  - for clients with MMSE scores 12 or below
  - 93% Sens & 97% Spec

- Single Screening question: “Do you often feel sad or depressed?”
  - 78% Sensitive & 87% Specificity
DEMENTIA AND OLDER ADULTS

http://www.dispatch.com/content/stories/local/2014/12/04/suicide-rate-for-elderly-a-concern.html
The Impact of Demographic Changes on the Annual Incidence of Dementia, by 10 year age groups

Dementia - Significance
DIFFERENCE BETWEEN ALZHEIMER’S AND AGE-RELATED COGNITIVE CHANGES?

- Normal age-related changes
  - Harder to recall information
  - Common to forget names of people you recently met
  - Know a word but not be able to recall (usually remember later)
  - Walk into a room; forget what you went in for…
  - Forget where you put things

- Not Normal Aging
  - Memory impairs ability to function
Dementia Risk Factors Across the Life Cycle

Risk factors
- Genetic risk factors
- SES-related factors
  - Hypertension and other vascular risk factors
  - Occupational exposure

Life habits (eg, smoking)
- Vascular risk factors
- Vascular diseases
- Depression
- Head trauma
- HRT(?)

Protective factors
- High education
- Antihypertensive drugs
- Diet: fish, vegetables
- Moderate alcohol
- Antihypertensive drugs, statins, NSAID, HRT(?)
- Rich social network
- Mental activities
- Physical activities

Dementia - Definition

- Variable, dependent on type of dementia and stage of dementia.
- As it progresses....core features
  - Memory Impairment
  - Problems with language
  - Visuospatial (getting lost/unable to use maps)
  - Executive function (reasoning, planning, problem-solving)
  - Lack of insight
  - Decline in social function
Dementia Syndrome – with multiple causes/conditions

- **Alzheimer’s Disease**
  - Most common – up to 70% of dementias

- **Vascular Dementias**
  - Post CVA
  - Multi-Infarct
  - Diabetes

- **Lewy Body Dementia**

- **Other Causes/conditions**
  - TBI
  - HIV
  - Neuro Diseases
    - Parkinson’s
    - Huntington’s
    - MS
  - Substance Abuse

- **Fronto-Temporal Lobe Dementias**
Neurodegeneration
Loss of connections and pathways (transmitter changes)
- Decreased acetyl choline
- Increased dopamine
- Decreased serotonin

Vermeiren et al. 2014
Neuropathology of Alzheimer’s Disease
Sensory Strip
Motor Strip
White Matter
Connections
BIG CHANGES

Formal Speech & Language
Center
HUGE CHANGES

Automatic Speech Rhythm – Music
Expletives
PRESERVED
Psychiatric Co-Morbidity and Behavioral Change

- Psychological
  - Depression
  - Delusions (paranoia)
  - Hallucinations
  - Anxiety

- Behavioral
  - Apathy
  - Verbal agitation
  - Combative behavior
  - Sleep-wake disruption
  - Sexual disinhibition
  - Wandering
  - Appetite disturbance
PSYCHIATRIC CO-MORBIDITY AND BEHAVIORAL CHANGE

- Alzheimer’s Disease
  - Early: apathy, depression, anxiety
  - Mid-Late: delusions, agitation, irritability
  - Elation or hallucinations less common

- Vascular Dementia
  - Apathy, depression, delusions

- Lewy Body Dementia
  - Early: REM sleep disorder, visual hallucinations, depression
  - Early - late: behavioral changes, delusions

- Frontotemporal Dementia (rare)
  - Throughout: disinhibition, apathy, personality changes, elation, loss of insight, prominent dietary/eating changes

Behavioral and Psychological Symptoms (BPSD)

- Complex, stressful and costly
- Causes include multiple related factors:
  - neurobiology of disease process
  - unmet needs
  - caregiver factors
  - environmental triggers

Complexity of symptoms means that there is no “one size fits all” solution.

Kales HC et al, BMJ 2015
Cognitive Screening

- **Mini Mental Status Exam (MMSE)**
  - 30 Points (9 minutes)
  - developed for Alzheimer’s Disease
  - education, language, cultural bias
  - Sens 81-92% and Spec 81-89%

- **Clock Draw Test (CDT)**
  - 1-2 minutes
  - 67-97% Sens and 69-93%
  - Variable findings based on population/scoring

- **Mini-Cog**
  - 3 item recall and CDT (3 minutes)
  - good for low education
  - no language or cultural bias
  - Sens 76-100% and Spec 83-89%
COGNITIVE SCREENING

- **Saint Louis University Mental Status (SLUMS)**
  - 30 Points (7-10 minutes)
  - No education bias
  - VA population (otherwise limited studies)
  - Sens 98-100% and Spec 98-100%

- **Montreal Cognitive Assessment (MoCA)**
  - 30 Points (>10 minutes)
  - Developed for MCI
  - Not validated in large samples
  - Education bias
  - Sens 80-100% and Spec. 50-76%
Developed by The Hartford Institute for Geriatric Nursing in collaboration with The National Alzheimer’s Association

Assessment tool that can be administered in 20 minutes or less. Topics include:

- Brief Evaluation of Executive Dysfunction
- Recognition of Dementia in Hospitalized Older Adult
- Assessing Pain in Persons with Dementia
- Assessing and Managing Delirium in Persons with Dementia
Delirium in Older Adults
**DELIRIUM: EPIDEMIOLOGY**

- Unrecognized/Misdiagnosed = 66% (!)

- Occurs in:
  - 6-56% - hospitalized older adults.
  - 15-53% of post-operative patients
    - Hip surgery over age 70 = 35-65%
  - 70-80% in the ICU
  - 60% of nursing home residents over age 75

- Associated mortality rates 22-76% - as high as MI or sepsis!

- Up to 75% die within 3 years

Virginia Mason study:
- Case control, 270 inpatients (mean age 64)
- Delirium preceded combative behavior in half of all cases
- 3.8-fold increased odds of combative behavior requiring a behavioral code intervention in hospitalized patients with delirium
- Delirium recognized less than half the time

SIGNIFICANCE

INCREASED rates of:

- functional decline
- length of hospital/SNF stays
- complications (pn, pressure ulcers, incontinence)
- LTC placement
- use of physical restraint
- death
DELIRIUM: DEFINITION

1. Acute onset (develops within hours to days)
2. Fluctuating course
3. Poor attention
4. Disorganized thinking
5. Altered levels of consciousness

Disorientation, memory impairment, day-night reversal, psychomotor agitation or slowness, hallucinations/misperceptions (usually visual – 40%).
Delirium: Definition

The disturbance is a direct physiologic consequence of a general medical condition, an intoxicating substance, medication use, or more than one cause.

Geriatric Emergency
Delirium: Symptoms

Three Types:

- **Hyperactive**: psychomotor agitation, increased arousal and delusions (30%)
- **Hypoactive**: withdrawal, lethargy and reduced arousal (60%)
- **Mixed**: Characteristics of both hyperactive and hypoactive delirium (10%)

**Hypoactive form is the most frequently overlooked and most deadly...**
Delirium: Predisposing Factors

- Male gender
- Advanced age (>65)
- Cognitive Impairment
- Depression
- Vision & hearing deficits
Figure 3. Top Potential Precipitating Risk Factors for Delirium, by Category, as Identified in Delirium-Associated Events Reported through the Pennsylvania Patient Safety Reporting System, 2005 through 2014

**INTERCURRENT ILLNESS OR OTHER PHYSIOLOGIC CAUSE**
- Alcohol or other substance abuse and/or withdrawal
- Infectious disease
- Respiratory condition
- Cardiac condition
- Renal disease
- Neurologic compromise
- Pain

**ENVIRONMENTAL**
- Restraints
- Intravenous catheters
- Nasogastric and enteral feeding tubes
- Endotracheal tubes
- Urinary catheters

**SPECIFIC MEDICATIONS**
- Opioids
- Benzodiazepines
- General anesthetics
- Antipsychotics
- Antidepressants
- Antibiotics
- Hypnotics
- Muscle relaxants
- Steroids

**SURGICAL AND PROCEDURAL**
- Procedure not specified in report
- Orthopedic procedure
- Gastrointestinal procedure
- Cardiac procedure
- Sedation for magnetic resonance imaging

46% 29% 23% 11%
Figure 2: Delirium as a Geriatric Syndrome

Multiple Morbid Processes → Specific Phenomenology

- Dementia
- Dehydration
- Severity of illness
- Sensory impairment
- Medication effects
- Sleep disturbance
- Older age

Delirium Syndrome
Delirium: Screening

Because delirium is an emergency geriatric condition, medical assessment and intervention is critical.
CONFUSION ASSESSMENT METHOD (CAM)

1. Acute onset and fluctuating course
2. Inattention

AND

3. Disorganized thinking
4. Altered level of consciousness

CAM Sens 94-100% Spec 89-95%
Inattention

“December, November, October, September….”

“Sunday, Saturday, Friday, Thursday…”

Disorganized thinking

Will a stone float on water?
Are there fish in the sea?
Do 2 lbs weigh more than 1lb?
Can you use a hammer to cut wood?

T A R D A A B A C R
S T A A A F B G R A
L A A R B A M ..... or
SAVEAHAART….
Depression: in a word

Depression is primarily a disorder of ___________ (mood)
Dementia: In a Word

Dementia is primarily a disorder of

_ _ _ _ _ _ _ (Memory)
Delirium is primarily a disorder of

(Attention)
IT IS COMMON FOR OLDER ADULTS TO EXPERIENCE MORE THAN ONE OF THE THREE D’S AT THE SAME TIME!

- So how do you tell the difference among the three of them?
- Next we’ll look at differentiating between the three D’s ...
DIFFERENTIATION

- Based on prevalence and significance of the 3Ds...important to promote earlier recognition and treatment

- Potential screening questions:
  - Do you have trouble with your memory?
  - Have you had recent changes in your memory?
  - Are others (family, friends) concerned about your memory?
  - Do you often feel downhearted and blue?

- History/Baseline function?
Differentiation

- Comorbidity is common
- Cognitive complaints common in both dementia and depression
  - Depressed – complain of CI and give up early
  - Dementia – more persistent, often unaware of deficits
  - Delirium – distracted
- Mental Status Exam may be low in all
  - Depression (can have MMSE in low 20’s)
  - Dementia – if MMSE below 20 can be more certain
  - Delirium – variable with poorest performance on concentration and thought
DEPRESSION AND DEMENTIA

- Often comorbid – 20- 40%
- Late-life depression associated with cognitive impairment (risk of dementia)
- Mild cognitive impairment is a risk for depression
- Some symptoms of dementia mimic those of depression:
  - Apathy, Loss of interest, Social withdrawal
- Irritability, worry and fear more common
- Less common: guilt, suicidal thoughts
DELIRIUM AND DEMENTIA

- Prevalence of delirium superimposed on dementia ranges from 22% to 89%

- Delirium is even more likely to be overlooked in the context of dementia; predictors for under-recognition:
  - Presence of the hypoactive form of delirium
  - Dementia diagnosis
  - Age 80 and older
  - Vision impairment
**PASRR Level II Evaluation**

- **Tips for delirium**
  - Sources for baseline function
  - Significant change in status – think delirium first
  - Expectation for sharing concerns/assessment

- **Dementia versus SMI – which if primary**
  - Benefits of individualized services
    - Medication (psychotropic) management
    - Psychotherapy (group or individual) – in early stages
    - Day programs
Thank You

Glenise McKenzie: mckenzig@ohsu.edu
Unfolding case – Mr. Walker

Risk factors, differentiation and screening tools

Case is based on: Michael Harper and Dr. C. Bree Johnston. An Unfolding Case of Delirium, Dementia, and Depression. POGOe - Portal of Geriatrics Online Education; 2009
Available from: https://www.pogoe.org/productid/18816

Case Study

- Mr. Walker is an 85-year-old farmer from Medford.
- He is worried because he is finding that he feels “awkward” at his longstanding poker club, and can no longer think of “conversation”.
- He is concerned that he might be losing his memory.
- He also finds that he now gets no enjoyment out of getting together with his friends.
CASE STUDY

- Mr. Garcia lives alone on a farm since his wife of many years died 2 years ago.
- He drives to get to the church and the grocery, but is not getting out much otherwise.
- He also has mild osteoarthritis, for which he takes acetaminophen (Tylenol).
What do you think?

- What age-related cognitive changes are normal? Abnormal?

- What do you think is going on?

- How would you explore further?
You discuss the situation with Mr. Walker and agree that you need to explore his memory further. He completed the ninth grade and is able to read.

You do a MMSE and he scores 26/30, missing two of three objects at five minutes and two letters of “world” backwards, saying “I was never good at spelling”.

What do you think?

What other tests might you administer?
Depression Assessment

- His GDS (short form) is 7/15. He says he has dropped most of his activities and interests, his life is empty, he is bored, and has no energy for things. He is worried that his real life is over and he is worried that he will become a burden to his children. He currently stays at home most of the time, and worries that his memory is “shot”. He is not satisfied with his life, (“who would be?”) but denies that he is depressed (“I am not the type to feel sorry for myself”).

- Do you think he is depressed?
- What risk factors does he have for depression?
DEPRESSION AND DEMENTIA

- How can you help differentiate depression from dementia?

- Mr. Walker is referred to his PCP, he agrees to take an antidepressant and to see a counselor. He is started on sertraline 50mg nightly and notes improvement within 4 weeks.
CASE STUDY

- Mr. Walker did well for over 2 years, however, now he is back with his son, who noted that Mr. Walker's phone was disconnected after Mr. Walker failed to pay a bill. Mr. Walker denies any problems, and says he has been “ok”.

- What do you think is going on?
- What do you do now?
Case Study

- You repeat a MMSE and a GDS on Mr. Garcia. His MMSE is now 21/30, with Mr. Garcia missing the date, 3/3 objects, 4 letters of WORLD, and the overlapping pentagons. His GDS is now 3/15.

- What do you think is going on now? Why?

- What other evaluation would you perform?

- What risk factors does Mr. Garcia have for dementia?
DEPRESSION AND DEMENTIA

- How can you differentiate between depression and dementia?
CASE STUDY

- Mr. Walker has done relatively well for six months after moving in with his son. However, now Mr. Walker is in the hospital with a hip fracture. When you go to see him, he is picking at the air and is moaning. Now his MMSE is only 7/30, and Mr. Garcia seems to drift off during the test without answering questions.

- Now what do you think is going on? Why?
DELIРИUM

- What risk factors does Mr. Garcia have for delirium?

- How can you differentiate between delirium and dementia? Delirium and depression?
Networking with NAPP
(National Association of PASRR Professionals)
http://www.pasrr.org

• NAPP hosts a follow-up PASRR related discussion following PTACs webinar

• The next Networking session with NAPP is:
  Tuesday, April 26th, 2016 @1 PM EST

Registration Link for Monthly Networking with NAPP Webinars
https://attendee.gotowebinar.com/rt/7812027187665157889

For more information about NAPP, please contact
nappfrontdesk@pasrr.org
How can you Participate in Networking with NAPP on PASRR and Dementia?

• Join the Networking with NAPP presentation on April 26th at 1PM EST
  – Send NAPP your dementia screening procedures
  – Send NAPP your weblinks to your PASRR dementia procedures
  – Send your questions or suggested presentation issues
  – Join the Networking with NAPP presentation panel

Contact NAPP at: nappfrontdesk@PASRR.org