

# ASSESSING THE IMPACT OF COVID-19 ON THE MENTAL HEALTH OF SENIORS



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*I do not have any relationships with ineligible companies.*

# IOWA VETERANS HOME



# OBJECTIVES



- At the conclusion of this activity, participants should be able to:
  - Identify the psychological effects of the coronavirus pandemic with regard to older patients.
  - Discuss the neuropsychiatric sequelae of COVID-19 in the elderly.
  - Improve telepsychiatry services to geriatric patients.

# LIMITED DATA AVAILABLE



- Small observational studies (cohort, case series, case studies).
- Systemic reviews.
- Large surveys conducted online or by telephone.

# COVID-19 IN OLDER PATIENTS



➤ 90% of deaths in Italy and 80% in US were elderly.

➤ Elderly have higher risk of death (3X):

- Co-morbid conditions such as HTN, CVD, DM, COPD.
- Rationing of care?

▪ Grolli, 2020



# NEUROLOGICAL SEQUELAE OF COVID-19

- Significant number (1/3) have neurological symptoms:
  - Loss of taste/smell, headache, and delirium most common.
  - Also GB Syndrome, TG neuralgia, seizures, cerebrovascular events, meningitis/encephalitis.
- Neurological symptoms more common in severe cases.
- But not commonly the main cause of death (4.1%).

▪ Alonso-Lana, 2020



# POTENTIAL CAUSES OF NEUROLOGICAL SEQUELAE

## ➤ **Direct viral invasion of brain:**

- Cytokines may damage BBB
- Enter via peripheral nervous system
- Scant evidence

## ➤ **Immune reaction/inflammation:**

- Cytokine storm
- Hypercoagulation

## ➤ **Hypoxic brain damage:**

- Verified by post mortem studies

## ➤ **Long ICU stays:**

- Ventilation, drug use, organ dysfunction

▪ Ryoo, 2020

# NEUROPATHOLOGY



- Post-mortem histopathological analysis found no evidence of direct brain invasion; only hypoxic changes.
  - Ryoo, 2020
  
- Neuroimaging of living COVID-19 patients with neurological symptoms:
  - 34% had lesions.
  - Mostly diffuse subcortical or deep white matter abnormalities.
  - Some had hemorrhages and infarcts as well.
    - Egbert 2020



# CASE STUDY: SHARON

- 75 year old married female who was admitted to nursing home 3 years ago with husband, mainly due to his needs. Heavily invested in being a caregiver.
- She had an extensive history of mental illness, including depression and anxiety since childhood.
- Past history of self harm as well sexual and somatic preoccupations.
- Cognitive impairment, bipolar, OCD and borderline all mentioned in records.
- Father was mentally ill, sexually inappropriate and completed suicide.

# SHARON



- MOCA on admission was 23/30. But appeared to be functioning highly with no confusion observed. BIMS on admission was 15/15.
- Head CT prior to admission unremarkable apart from small vessel disease.
- Labs (CMP, CBC, TSH, B12, syphilis) unremarkable.
- Initial diagnoses: Generalized anxiety disorder, unspecified bipolar disorder, adjustment disorder, mild neurocognitive disorder.
- Deemed to have decisional capacity.

# SHARON



- Was very socially active and engaged in various activities.
- Challenging for staff: Demanding of their time and attention.
- Would often fret about husband and his care.
- Considered self an artist.
- Began psychotherapy immediately.
- Often ruminated about past sexual indiscretions.
- Had urges to scratch/injure self with pen or art tools.
- Soon after admission, added diagnosis of unspecified personality disorder with cluster B traits (borderline, histrionic, narcissistic).

# SHARON



- At various points, complained dramatically of insomnia, racing thoughts, difficulty concentrating.
- Also complained of medication side effects, especially dry mouth.
- Initially maintained on quetiapine and lorazepam.
- Trials of lurasidone, mirtazapine, oxcarbazepine not well tolerated or ineffective.
- Sent to UIHC for second opinion: Borderline PD thought to be primary diagnosis. DBT recommended.
- Bipolar diagnosis dropped and persistent depressive disorder added.

# NEUROPSYCHIATRIC SEQUELAE IN PAST CORONAVIRUS EPIDEMICS



## ➤ SARS-CoV, MERS

### ➤ PTSD most common psychiatric disorder, followed by anxiety and depression.

- Persisted for years in many.

### ➤ Long-term cognitive impairment in many who were on ventilators:

- Attention, memory, verbal fluency, processing speed, executive function.
- 78% one year out, and 47% two years out.

- Alonso-Lana, 2020



# MENTAL HEALTH CONSIDERATIONS

- 20% of people >60 have a neuropsychiatric disorder (dementia, major depression and anxiety most prevalent).
- Chronic stress and depression is associated with activation of the HPA axis and in turn with neuroinflammation and inflammatory processes.
- Prolonged stress can increase corticosteroids causing increased susceptibility to viral infection.

• Grolli, 2020



# ACUTE NEUROPSYCHIATRIC SEQUELAE OF COVID-19

- Anxiety, insomnia, depression, PTSD, cognitive impairment all reported.
- Pre-existing neuropsychiatric condition increased risk.
- Overall in patients of all ages neuropsychiatric symptoms in 22.5% of patients.
- 31.2% of patients >60 had altered mental status.
- 69% of ICU admissions were agitated and 2/3 of them were cognitively impaired. Many required restraints and sedatives.



# ACUTE NEUROPSYCHIATRIC SEQUELAE OF COVID-19

- Systemic review of hospitalized patients.
- Mean ages in studies ranged from 61-69.
- 43.0-66.8% had cognitive impairment.
- **Delirium** was most common term. Also confusion, encephalopathy, encephalitis, altered mental status, and psychosis reported.
- Cytokine storm implicated.

• Ainefeesi, 2021



# NEW-ONSET PSYCHOSIS DURING PANDEMIC

- Associated with delirium or corticosteroid use.
    - Usually resolved after recovery.
  
  - Some cases also associated with quarantine stress:
    - Paranoia, fear, excessive/conflicting information.
- Fontes, 2020



# LONG TERM NEUROPSYCHIATRIC SEQUELAE OF COVID-19

- **VERY LITTLE IS KNOWN ABOUT THE LONG TERM NEUROPSYCHIATRIC EFFECTS OF COVID-19 ON THE ELDERLY.**

# LONG TERM NEUROPSYCHIATRIC SEQUELAE OF COVID-19



- Some recovered patients still have impaired memory, attention and processing speed.
- Anxiety and depression common after recovery.
- 1/3 of patients discharged from ICU had a dysexecutive syndrome with impaired attention, orientation and psychomotor function.
- 42% of hospitalized had delirium and then had reduced cognitive scores **4 weeks** after discharge.

▪ Alonso-Lana, 2020

# LONG TERM NEUROPSYCHIATRIC SEQUELAE OF COVID-19



- In one systemic review, the median age of survivors was 54.4 years old and 79.9% were hospitalized.
- 54% of them had symptoms beyond **6 months**.
- The most common persistent problems were pulmonary sequelae, neurologic syndromes, mental health disorders, functional mobility limitations and constitutional symptoms.
  - 37.5% with fatigue/weakness.
  - 29.6% with generalized anxiety
  - 23.8% difficulty concentrating

• Groff, 2021

# LONG TERM NEUROPSYCHIATRIC SEQUELAE OF COVID-19



- 740 patients followed for **several months**, including inpatient, ED, and outpatient cases.
- Assessing complaints of “brain fog.”
- Mean age 49.
- Neuropsychological testing performed. Deficits:
  - 24% memory encoding.
  - 23% memory recall.
  - 20% category fluency.
  - 18% processing speed.
  - 16% executive function.
  - 15% Phonemic fluency.

▪ Becker, 2021



# COVID-19 IN ELDERS WITH COGNITIVE IMPAIRMENT

- Confusion, disorientation, refusal of care, reduced appetite may be initial symptom.
- Abulia, alogia, rigidity, agitation may occur.
- Subtle behavioral changes may be initial symptoms and present even before fever or cough.

• Alonso-Lana, 2020



# COVID-19 IN ELDERS WITH COGNITIVE IMPAIRMENT

- Dementia increases risk of infection, severity of infection and mortality rate.
- Apolipoprotein E may increase risk of infection and death.
  - Known to be associated with dementia and inflammatory response.
- Delirium is common:
  - Hypoactive delirium more common than hyperactive.
  - Polypharmacy and catheter use increase risk.

▪ Manca, 2020

# COVID-19 AND ALZHEIMER'S



- Many COVID-19 patients had elevated biomarkers similar to patients who have Alzheimer's disease (especially those with neurologic sequelae).
- Suggestive of inflammation and neuronal injury.
- Toxic metabolic encephalopathy (due to sepsis, hypoxia or multiple) was most common neurologic event.
- These patients had more cognitive and functional impairment.
- Could COVID-19 increase risk for dementia or worsen pre-existing dementia?

• Frontera, 2021

# PSYCHOLOGICAL IMPACT OF ISOLATION



- **Social isolation (objective) versus loneliness (subjective):**
  - Both can increase mortality (immune/inflammation).
  - Both can increase risk of dementia.
  - Isolation tends to worsen anxiety, depression, sleep, physical activity.
  - Can be lonely even if not isolated (perception).
  - Before pandemic, about  $\frac{1}{4}$  of elderly reported loneliness.

▪ Roy, 2020

# COPING ABILITIES OF SENIORS



- Older adults tend to have lower stress reactivity and better emotional regulation.
- “Successful aging” improves coping abilities and optimism.
- Negative views of aging tend to correlate with increased loneliness.
- Close meaningful relationships are more important than frequent interactions.

• Vahia, 2020



# EFFECTS OF CORONAVIRUS QUARANTINE ON COGNITIVELY INTACT ELDERLY

- Many experienced anxiety, depression, sleep disruption or reduced physical activity.
  - Excessive information could cause emotional instability or paranoia.
  - If a close relative was affected, this could increase depression.
  - Apprehension about safety/security could increase anxiety/panic.
  - Grolli, 2020
  
- Worse for elders who felt older than actual age or had pre-existing neuropsychiatric conditions.
  
- May be dependent on number of people in household and size of social network.
  - Manca, 2020



# SURVEY OF PSYCHOLOGICAL SYMPTOMS DURING PANDEMIC

- JAMA reported a survey of 933 community dwelling subjects >65 who were **cognitively intact**:
  - Trauma/stress 9.2%
  - Anxiety 6.2%
  - Depression 5.8%
  
- Younger age groups had much higher rates:
  - 45-64 **2X**, 25-44 **5X**, 18-24 **8X**.
  - Vahia, 2020



# ARE OLDER ADULTS MORE RESILIENT?

- Several studies in multiple countries confirmed that older adults were experiencing fewer pandemic related psychological symptoms (anxiety, depression, stress) than younger adults.
- Thought to have more “wisdom”:
  - Compassion, empathy, emotional regulation, self reflection, decisiveness, social advising, spirituality, acceptance of uncertainty, tolerance of diverse perspectives, social connectedness.
  - Vahia, 2020



# EFFECTS OF CORONAVIRUS QUARANTINE ON COGNITIVELY IMPAIRED ELDERERS

- Multiple studies confirm increased rates of behavioral and psychological symptoms in those with subjective cognitive impairment, mild cognitive impairment and dementia including:
  - Apathy, agitation, aggression, irritability, depression, sleep disturbance.
- Cognitive decline, language problems and aberrant motor activity also reported.

▪ Alonso, 2020



# INDIRECT EFFECTS OF CORONAVIRUS QUARANTINE ON COGNITIVELY IMPAIRED ELDERS

- Less access to memory clinics, home care, outpatient care, senior centers, family contact, etc.
  - Resulting in less medical care, socialization and exercise.
- Manca, 2020

# STRATEGIES FOR MENTAL WELLNESS DURING QUARANTINE



- Encourage family/friends to connect any way possible:
  - Video, phone call, Email, writing, packages, etc.
- Reduce exposure to “news”.
- Regular physical activity.
- Stay on a schedule (esp. sleeping and eating).
- Online classes and groups.
- Spiritual activities.
- **BE CREATIVE!**
  - Example: Program to pair student volunteers with nursing home residents to visit by phone.



# EFFECTS OF CORONAVIRUS QUARANTINE ON CAREGIVERS

- Pre-pandemic, dementia caregivers reported anxiety (43.6%) and depressive (34%) symptoms.
  - Altieri, 2020
  
- Stress symptoms in 2/3 of caregivers during pandemic.
  - Many caregivers working from home and schooling children.
  - Iodice, 2020
  
- Increased rates of caregiver anxiety associated with:
  - Female, pre-existing psychiatric problems, contact with COVID-19, or lack access to information.
  - Li, 2021



# EFFECTS OF CORONAVIRUS QUARANTINE ON CAREGIVERS

## ➤ Dependent adult abuse:

- One study reported increase of 83.6% during quarantine.
  - 1/5 seniors reported caregiver abuse.
- Increased risk: Financial strain, close proximity, lacking a sense of community.

• Chang, 2021

# PROLONGED GRIEF DISORDER



- New Diagnosis for ICD-11 and DSM-5.
- Persistent and pervasive yearning, longing, pre-occupying thoughts and memories of the deceased lasting at least 6 months.
- Complicated by the pandemic:
  - Dying alone.
  - Rapid unexpected death.
  - Bereavement rituals (e.g., funerals).
  - Less social support.
  - Changes in hospice or palliative care.
  - Guilt related to circumstances.

# SHARON



- Approximately two years after admission, COVID-19 restrictions are implemented at her facility.
- She struggles with the changes and initially violates infection control rules.
- Complains bitterly of being “trapped” and “imprisoned.”
- She and her husband both test positive for SARS-Cov2 and develop symptoms of COVID-19. They are both moved to the COVID unit for several days.
- She seems to enjoy the extra attention received in the COVID unit and begs to stay there.
- She and husband both have mild cases of COVID and move back to home unit after a short stay on COVID unit.

# SHARON



- After returning to home unit, behavior changes are noted.
- Becomes obsessive and compulsive about cleaning vaginal and anal areas.
- Uses large quantities of cleaning supplies and worries constantly about running out.
- Fixated on losing weight (due to fibromyalgia).
- Obsessive about bowels making multiple requests for laxatives and for nurses to “dig me out”.
- Obsessive about urinary incontinence and pull-ups.
- Insists that clothes are wet and puts them in dryer compulsively.
- OCD added to list of diagnoses.

# SHARON



- Watches the same TV show obsessively and claims that actors have changed.
- Pries bridgework out of mouth with a tweezer causing bleeding and injury. Wanted all remaining teeth pulled out “so I could have a full set in the morning.”
- Scrapes lips with fingernails causing bleeding. Was trying to achieve “the perfect lips.”
- Never appears delirious.
- Trials of risperidone and ziprasidone not tolerated or beneficial.
- Unspecified psychotic disorder (brief vs bipolar) added.

# SHARON



- SLUMS test 17/30
- Decisional capacity doubted.
- Moved to memory care unit.
- Becomes frantic and very depressed (mainly due to limited access to hygienic supplies).
- Neuropsychological assessment performed at UIHC:
  - Impaired cognitive processing speed, learning, memory, executive function and visual/spatial.
  - Language and attention intact.
  - Major neurocognitive disorder likely due to vascular disease, medication and mental illness. Cannot rule out COVID.
  - Lacks decisional capacity for complex decisions.
- Upset about testing results (doctor said she was “stupid” and “very bad person”).
- Donepezil started.

# SHARON TODAY



- Quetiapine, lorazepam, sertraline, donepezil.
- Mood stable, non-psychotic, BIMS 15/15.
- Continues to challenge staff.
- Back to baseline behaviorally?
- Will her neuropsychological testing improve?
- Will she return to an open unit?

# SHARON'S TIMELINE



Timeline	Admission 2 years before COVID Dx	2 months before COVID	1 month after COVID	4 months after COVID	7 months after COVID	10 months after COVID	15 months after COVID
BIMS	15/15	13	13	12	9	14	15/15
PHQ-9	8/27	16	13	18	1	6	6/27





# TELEPSYCHIATRY

- Has been utilized for many years by the VA, rural communities, prisons and in many LTC facilities.
- COVID-19 brought an unprecedented expansion.
- 75% of nursing home residents benefitted from psychology services via telehealth during pandemic.
  - Renzi, 2020



# TELEPSYCHIATRY BARRIERS FOR THE ELDERLY

- Sensory deficits
- Speech/language impairment
- Cognitive impairment
- Access to and familiarity with technology
- Preference to see providers in person
- Irritates some dementia patients
- Limitations of LTC staff



# TELEPSYCHIATRY TIPS

- Ask family members to assist if at home.
- Be attentive to lighting.
- Turn off other devices and shut doors.
- Set up on stationary surface.
- Headphones if appropriate.
- Long-term care facilities:
  - Staff education.
  - Designate staff to assist (repeat questions, visual scan).
  - Ask facility to upgrade WiFi/equipment.

# BENEFITS OF TELEPSYCHIATRY IN LTC



- Safe for patients and providers.
- More efficient and less travel time.
- Can utilize volume controls and headphones.
- LTC facility can capture reimbursement for providing assistance.
- Easy to include learners and family members.



# ELECTRONIC COGNITIVE ASSESSMENT INSTRUMENTS

<b>Video Only:</b>	MOCA telehealth	MMSE		
<b>Telephone or Video:</b>	MOCA telephone	Brief Test of Adult Cognition	Cognitive Telephone Screening Instrument	Telephone Interview for Cognitive Status

Hantke, 2020



# ETHICAL DILEMMAS

- Ageism
- Rationing of care (acute and maintenance)
- “Being Mortal” by Atul Gawande.

# SUMMARY



- Significant numbers of COVID-19 patients have neurological sequelae, although these symptoms may be mild and rarely cause death.
- Both social isolation and COVID-19 can exacerbate pre-existing neuropsychiatric disorders.
- Social isolation often causes increased rates of anxiety, depression, and stress/trauma symptoms, but higher functioning older adults may be less affected than younger adults are.
- Cognitively impaired patients infected with SARS-CoV2 often initially present with subtle behavior changes.
- Very little is known about the long-term neuropsychiatric effects of COVID-19 on the elderly.
- Lifestyle, technology and behavioral interventions are important to offset the adverse effects of quarantine.

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