

Updates in Geriatric Psychiatry 2015

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Objectives

- Discuss updates in geriatric health and wellness in 2015
- Review updates in geriatric depression and anxiety
- Review 2015 Facts and Figures as published by the Alzheimer's Association
- Discuss risks for cognitive impairments related to physical concerns/conditions

Disclosures

- None

Health and Wellness

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"If I don't go to the doctor, he can't find anything wrong with me. That's how I stay healthy!"

2015 United States of Aging Survey

- Survey of 1,000 adults 60 and older was conducted by the National Association of Area Agencies on Aging, the National Council on Aging, and UnitedHealthcare.
 - The survey also included 150 professionals who support seniors, such as doctors, pharmacists, senior care specialists and credit union managers.
- 86 percent felt prepared overall for the process of aging
 - 42 percent said they are "very prepared" to age.
 - 40 percent said they are most concerned about maintaining their physical health
 - More than one-third were concerned about maintaining their mental health and their memory as they get older.
- More than two-thirds of respondents said the keys to good health include a healthy diet, having a good attitude and getting enough sleep.

2015 United States of Aging Survey (continued)

- Fifty-eight percent of respondents said they had not changed residences in more than 20 years,
 - Three-quarters said they intend to live in their current home for the rest of their lives.
- 43% percent of older respondents felt very confident they would be able to afford health care costs as they age
 - 62% percent of professionals were not confident that older adults can afford these costs.
- Only 47 percent of older adults and 37 percent of professionals felt their communities were doing enough to prepare for the needs of retiring baby boomers.
- The top aging-related concerns cited by the professionals
 - Protecting seniors from financial scams
 - Providing them with affordable housing
 - Memory loss.

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**“Your doctor can only do so much.
The rest is up to you. Stop getting older.”**

Epidemiology of the Homebound Population in the United States

- Cross-sectional data from the National Health and Aging Trends Study collected in 2011 in the contiguous United States.
 - Participants were a nationally representative sample of 7603 noninstitutionalized Medicare beneficiaries 65 years and older.
- In 2011, the prevalence of homebound individuals was 5.6% (95% CI, 5.1%-6.2%)
 - Estimated 395 422 people who were completely homebound
 - 1 578 984 people who were mostly homebound.
- Among semi-homebound individuals,
 - Prevalence of those who never left home without personal assistance was 3.3% (2.8%-3.8%)
 - Prevalence of those who required help or had difficulty was 11.7% (10.9%-12.6%).
- Completely homebound individuals were more likely to be
 - Older (83.2 vs 74.3 years)
 - Female (67.9% vs 53.4%)
 - Nonwhite race (34.1% vs 17.6%, $P < .001$) and have
 - Less educated and lower income than nonhomebound individuals.
 - They also had more chronic conditions (4.9 vs 2.5)
 - more likely to have been hospitalized in the last 12 months (52.1% vs 16.2%) ($P < .001$ for both).
 - Only 11.9% of completely homebound individuals reported receiving primary care services at home.

Mental Health Care Delivered to Younger and Older Adults by Office-Based Physicians Nationally

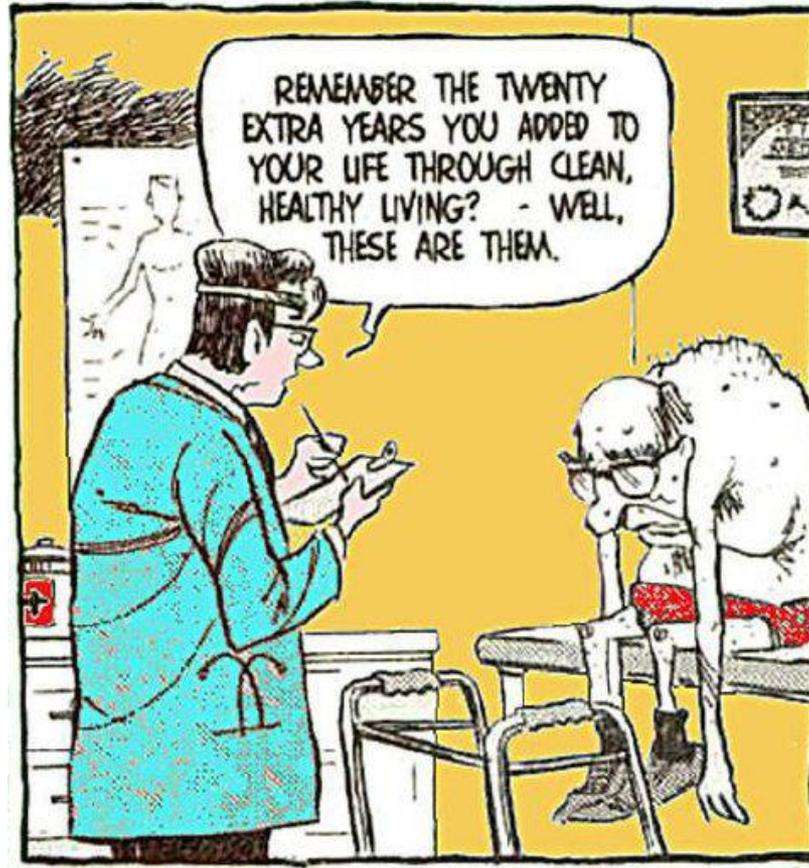
- To compare the provision of mental health care to older adults with that provided to younger adults.
- Analysis of the National Ambulatory Medical Care Survey.
 - Visits to office-based physicians in the United States, 2007 to 2010
 - n = 100,661 visits
 - Individuals with an outpatient visit resulting in a mental health diagnosis or treatment,
 - Visit resulting in a mental disorder diagnosis, at which a psychotropic medication was prescribed
 - Visit to a psychiatrist
 - Visit including psychotherapy.
- **Results**
 - Less care of older adults is from psychiatrists or psychotherapy.
 - Older adults had a smaller proportion than younger adults:
 - Of visits with a mental disorder diagnosis (4.8% vs 9.5%),
 - Visits to a psychiatrist (0.9% vs 4.0%),
 - Visit that include psychotherapy (0.6% vs 2.3%).
 - Older adults have a far higher rate of psychotropic use than younger adults on a per-population basis.
 - The percentage of older adult psychotropic visits was slightly smaller than of younger adult visits (18.1% vs 19.2%).
 - Older adults had a higher rate of psychotropic visits (121.4 per 100 population) than younger adults (56.8 per 100 population).

Benzodiazepine Use in the United States

- To describe benzodiazepine prescription patterns in the United States focusing on patient age and duration of use.
- A retrospective descriptive analysis of benzodiazepine prescriptions was performed with the 2008 LifeLink LRx Longitudinal Prescription database (IMS Health Inc),
 - Approximately 60% of all retail pharmacies in the United States.
 - Denominators were adjusted to generalize estimates to the US population.
- **Results**
 - In 2008, approximately 5.2% of US adults aged 18 to 80 years used benzodiazepines.
 - The percentage who used benzodiazepines increased with age
 - 2.6% (18-35 years)
 - 5.4% (36-50 years)
 - 7.4% (51-64 years)
 - 8.7% (65-80 years).
 - Benzodiazepine use was nearly twice as prevalent in women as men.

Benzodiazepine Use in the United States (continued)

- Results
 - The proportion of benzodiazepine use that was long term increased with age
 - 14.7% (18-35 years)
 - 31.4% (65-80 years)
 - The proportion that received a benzodiazepine prescription from a psychiatrist decreased with age
 - 15.0% (18-35 years)
 - 5.7% (65-80 years)
 - In all age groups, roughly one-quarter of individuals receiving benzodiazepine involved long-acting benzodiazepine use.
- Despite cautions concerning risks associated with long-term benzodiazepine use, especially in older patients, long-term benzodiazepine use remains common in this age group.



Depression

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“All I want to do is lie around all day. This isn’t helping.”

Adverse Childhood Experiences and Geriatric Depression

- This study utilizes data from the 2010 Behavioral Risk Factor Surveillance System (BRFSS).
 - The BRFSS consists of a randomly selected, nationally representative group of participants interviewed via telephone.
- The surveys consist of three main question types
 - A fixed core of questions asked of all participants
 - Optional modules that states may add if desired
 - State-added questions.
- In 2010, four states (Hawaii, Nevada, Vermont, and Wisconsin) asked both the depression screening and the ACE questions, such as physical and sexual abuse in childhood, and were included in analysis.
- 8,051 individuals aged 60 years and older who completed questions regarding depression and Adverse Childhood Experiences (ACEs).
 - The depression screening questions were drawn from the Patient Health Questionnaire eight-item scale (PHQ-8).
 - Six different types of ACEs were examined: parents being physically abusive to each other, being physically harmed by a parent, being sworn at by the parent, being touched sexually by an adult, being forced to sexually touch an adult, and being forced into intercourse.
 - Episodes of abuse were categorized as never, once, or more than once

Association Between Type and Frequency of ACEs and Geriatric Depression

	Total (N)	% Depressed (95% CI)	Crude Odds Ratio (95% CI)	Adjusted Odds Ratio (95% CI)	Full Model
Parents beat each other					
Never	7,202	4.7 (3.9–5.7)			
Once	319	9.3 (4.2–19.1)	2.05 (0.86–4.87)	1.95 (0.9–4.21)	1.47 (0.6–3.57)
More than once	724	12.5 (8.7–17.7)	2.89 (1.83–4.54)	2.69 (1.7–4.8)	1.32 (0.65–2.69)
Parents physically hurt you					
Never	7,209	4.3 (3.5–5.3)	–	–	
Once	307	7.7 (3.5–16)	1.85 (0.78–4.37)	1.98 (0.83–4.73)	1.58 (0.58–4.27)
More than once	790	17.1 (12.8–22.6)	4.59 (3.06–6.87)	4.55 (3.05–6.77)	2.94 (1.68–5.13)
Parents swore at you					
Never	6,182	4.4 (3.5–5.5)	–	–	
Once	446	5.5 (2.2–12.8)	1.26 (0.48–3.31)	1.26 (0.51–3.08)	1.11 (0.45–2.73)
More than once	1,646	10.2 (8–13.1)	2.49 (1.74–3.58)	2.41 (1.68–3.45)	1.11 (0.69–1.76)
Someone touched you sexually					
Never	7,575	4.9 (4–5.8)	–	–	
Once	287	9.4 (5–17.1)	2.04 (1–4.17)	1.63 (0.77–3.44)	1.17 (0.54–2.5)
More than once	418	18.2 (11.8–27)	4.36 (2.53–7.52)	3.93 (2.27–6.8)	0.9 (0.38–2.1)
Someone made you touch them sexually					
Never	7,869	5 (4.2–6)	–	–	
Once	166	9.5 (3.5–23.4)	1.97 (0.65–5.84)	1.86 (0.61–5.69)	1.33 (0.44–3.97)
More than once	256	23 (14.1–35.4)	5.63 (2.99–10.6)	5.18 (2.91–9.22)	1.87 (0.5–7.02)
Forced to have sex					
Never	8,067	5.1 (4.3–6.1)	–	–	
Once	84	13.7 (5.7–29.5)	2.96 (1.11–7.89)	2.92 (1.06–8.02)	1.68 (0.49–5.8)
More than once	150	35.2 (22.4–50.6)	10.12 (5.22–19.62)	9.78 (4.58–20.9)	3.66 (1.01–13.2)

Results

Both prior to and after controlling for age, sex, and race, only one ACE scenario (forced sex) resulted in a statistically significant change in point prevalence of depression after a single episode.

The greatest increase from the baseline depression occurred in the group endorsing multiple episodes of forced sexual intercourse.

When any ACE occurred on a repeated basis, however, significant changes were seen in depression point prevalence across all types of abuse.

Once all ACEs are included in a single model, significance remains only for repetitive physical abuse and repeated forced intercourse.

A Systematic Review and Meta-analysis of Psychotherapy for Late-Life Depression

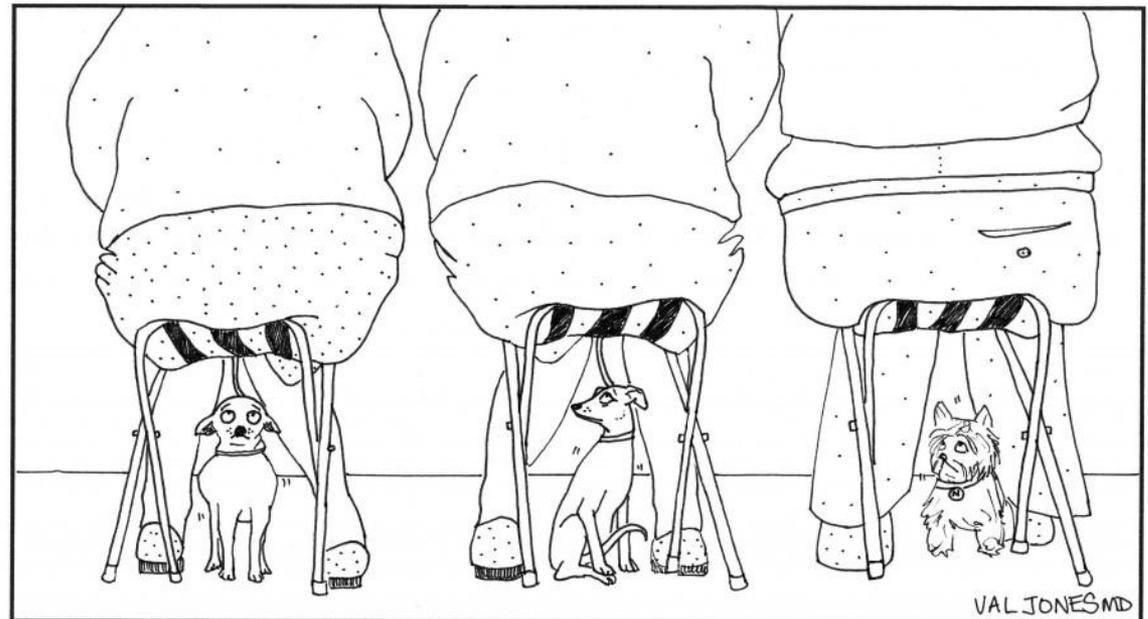
- To determine the efficacy of psychotherapy in late-life depression and to determine the effect of the type of control group on the magnitude of psychotherapy effects.
- A systematic review and meta-analysis of randomized controlled psychotherapy trials for late-life depression.
 - Subjects aged 55 years or older with acute-phase depressive disorder.
- Change in depressive symptoms was measured with validated scales.
 - Standardized mean differences (SMD) were calculated for each therapy-control contrast, as meta-analytic summaries for contrasts using a similar control, and for all contrasts combined.
- Results
 - The search identified 27 trials with 37 therapy-control contrasts and 2,245 subjects.
 - Trials utilized five types of control groups (waitlist, treatment-as-usual, attention, supportive therapy, placebo).
 - In the combined contrasts, psychotherapy was effective (SMD: 0.73)
 - The SMD varied widely (from 0.05 to 1.36) and significantly between subgroups by type of control
 - In five trials that compared psychotherapy with supportive therapy, the SMD was 0.39.
 - The SMD was 0.11 within the waitlist controls and 1.10 within the supportive therapy subgroup.
- Psychotherapy is effective for late-life depression, but the magnitude of the effect varies widely with the type of control group.
- Supportive therapy appears to best control for the nonspecific elements of psychotherapy and is associated with considerable change itself, but few trials have utilized it as a control.

Older Age Is Associated with Rapid Remission of Depression After Electroconvulsive Therapy: A Latent Class Growth Analysis

- To empirically identify latent course trajectories of depressive symptoms during electroconvulsive therapy (ECT)
- Multicenter collaborative ECT design
 - 120 patients fulfilling the Mini International Neuropsychiatric Interview criteria for major depressive disorder and referred for ECT were selected.
 - Ratings of the 17-item Hamilton Rating Scale for Depression (HRSD) were obtained weekly during the course of ECT.
- Results strongly confirm the favorable outcome of ECT among elderly depressed inpatients.
 - Distinct course trajectories during 6-week follow-up ECT treatment
 - "rapid remission"
 - Remission rates were as high as 80.1% in the rapid remission class.
 - Older age was associated with rapid remission, even after adjustment for putative confounders.
 - "moderate response"
 - "nonremitting" course trajectories.

Anxiety

PET THERAPY



"Nervous little dogs 'face their fears' at an anxiety management seminar."

Course of Posttraumatic Stress Disorder 40 Years After the Vietnam War: Findings From the National Vietnam Veterans Longitudinal Study

- The NVVLS survey consisted of a self-report health questionnaire (n = 1409), a computer-assisted telephone survey health interview (n = 1279), and a telephone clinical interview (n = 400) in a representative national sample of veterans who served in the Vietnam theater of operations (theater veterans) from July 3, 2012, through May 17, 2013.
- Of 2348 NVVRS participants, 1920 were alive at the outset of the NVVLS, and 81 died during recruitment;
- 1450 of the remaining 1839 (78.8%) participated in at least 1 NVVLS study phase.
- Data analysis was performed from May 18, 2013, through January 9, 2015, with further analyses continued through April 13, 2015.
- Approximately 271 000 Vietnam theater veterans have current full PTSD plus subthreshold war-zone PTSD, one-third of whom have current major depressive disorder, 40 or more years after the war.

Course of Posttraumatic Stress Disorder 40 Years After the Vietnam War: Findings From the National Vietnam Veterans Longitudinal Study (continued)

- Male theater veterans prevalence estimates
 - 4.5% (1.7%-7.3%) based on CAPS-5 criteria for a current PTSD diagnosis
 - 10.8% (6.5%-15.1%) based on CAPS-5 full plus subthreshold PTSD
 - 11.2% (8.3%-14.2%) based on PCL-5+ criteria for current war-zone PTSD
 - 4.6% (2.6%-6.6%) non-war-zone PTSD
- Female veterans, prevalence estimates
 - 6.1% (1.8%-10.3%) based on CAPS-5 criteria for a current PTSD diagnosis
 - 8.7% (3.8%-13.6%) based on CAPS-5 full plus subthreshold PTSD
 - 6.6% (3.5%-9.6%) based on PCL-5+ criteria for current war-zone PTSD
 - 5.1% (2.3%-8.0%) non-war-zone PTSD.
- Comorbid major depression occurred in 36.7% (6.2%-67.2%) of veterans with current war-zone PTSD.
- With regard to the course of PTSD,
 - 16.0% of theater veterans reported an increase of greater than 20 points in Mississippi Scale for Combat-Related PTSD symptoms
 - 7.6% reported a decrease of greater than 20 points in Mississippi Scale for Combat-Related PTSD symptoms.

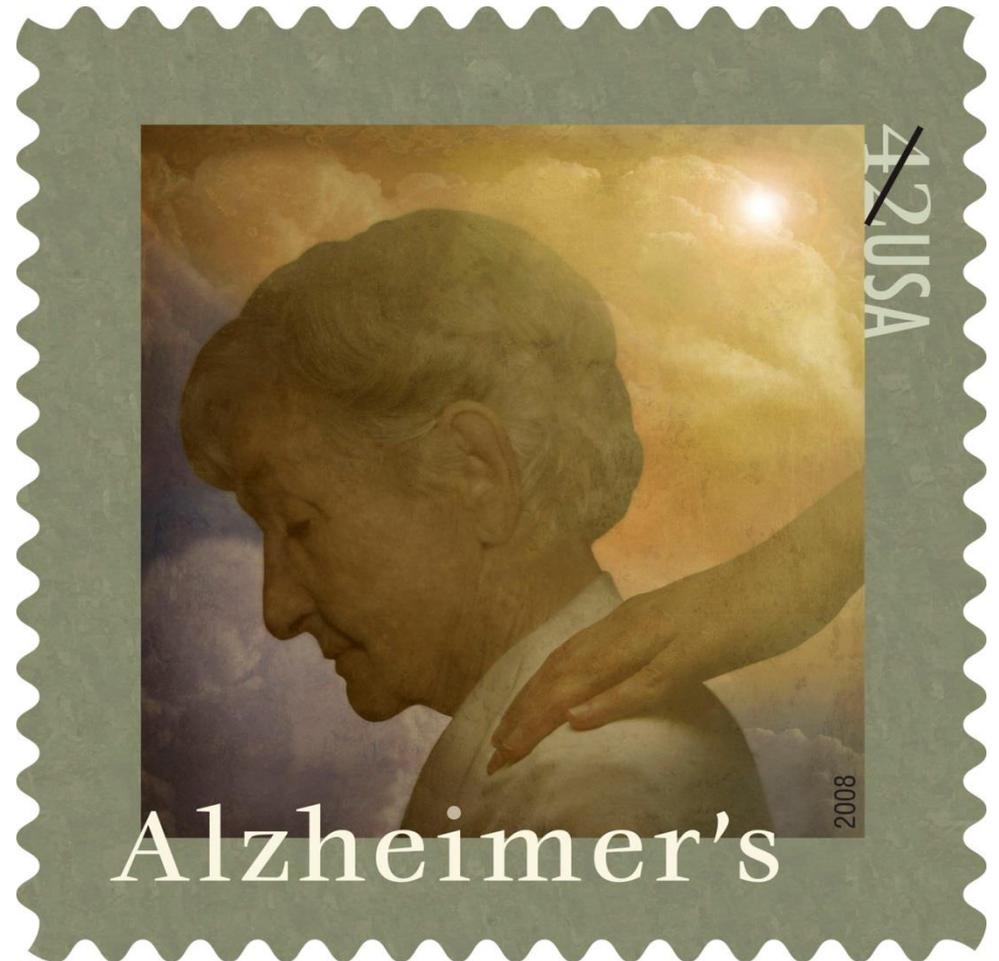
Telephone-Delivered Cognitive Behavioral Therapy and Telephone-Delivered Nondirective Supportive Therapy for Rural Older Adults With Generalized Anxiety Disorder: A Randomized Clinical Trial

- To examine the effects of telephone-delivered cognitive behavioral therapy (CBT) compared with telephone-delivered nondirective supportive therapy (NST) in rural older adults with GAD.
- Randomized clinical trial in the participants' homes
 - 141 adults aged 60 years and older
 - Principal or co-principal diagnosis of GAD
 - January 27, 2011, and October 22, 2013.
- Among the 141 participants, 70 were randomized to receive CBT and 71 to receive NST.
 - Telephone-delivered CBT consisted of as many as 11 sessions (9 were required)
 - focused on recognition of anxiety symptoms, relaxation, cognitive restructuring, the use of coping statements, problem solving, worry control, behavioral activation, exposure therapy, and relapse prevention, with optional chapters on sleep and pain.
 - Telephone-delivered NST consisted of 10 sessions
 - focused on providing a supportive atmosphere in which participants could share and discuss their feelings and did not provide any direct suggestions for coping.

Telephone-Delivered Cognitive Behavioral Therapy and Telephone-Delivered Nondirective Supportive Therapy for Rural Older Adults With Generalized Anxiety Disorder: A Randomized Clinical Trial (continued)

- **Results**
 - At 4 months' follow-up, there was a significantly greater decline in worry severity among participants in the telephone-delivered CBT group (difference in improvement, -4.07) but no significant differences in general anxiety symptoms (difference in improvement, -1.52).
 - At 4 months' follow-up, there was a significantly greater decline in GAD symptoms (difference in improvement, -2.36) and depressive symptoms (difference in improvement, -3.23) among participants in the telephone-delivered CBT group.
- Telephone-delivered CBT was superior to telephone-delivered NST in reducing worry, GAD symptoms, and depressive symptoms in older adults with GAD.

Alzheimer's Disease



Prevalence

- An estimated 5.3 million Americans of all ages have Alzheimer's disease in 2015.
 - 5.1 million people are age 65 and older
 - 3.2 million are women (two-thirds)
 - 1.9 million are men.
 - Older African-Americans and Hispanics are more likely than older whites to have Alzheimer's disease and other dementias.
 - Approximately 200,000 individuals are under age 65 (younger-onset Alzheimer's).
- By 2025, the number of people age 65 and older with Alzheimer's disease is estimated to reach 7.1 million
 - 40 percent increase from the 5.1 million age 65 and older affected in 2015.
- By 2050, the number of people age 65 and older with Alzheimer's disease may nearly triple
 - 13.8 million projected

Mortality

- In 2015, an estimated 700,000 people in the United States age 65 and older will die with Alzheimer's.
- As the population of the United States ages, deaths from Alzheimer's disease have increased significantly.
 - Between 2000 and 2013, deaths attributed to Alzheimer's disease increased 71 percent
 - Deaths attributed heart disease (the number one cause of death) decreased 14 percent.
- Alzheimer's is the only disease among the top 10 causes of death in America that cannot be prevented, cured or even slowed.

Impact on Caregivers

- In 2014, friends and family of people with Alzheimer's and other dementias provided an estimated 17.9 billion hours of unpaid care
 - This is approximately 46 percent of the net value of Walmart sales in 2013 and nearly eight times the total revenue of McDonald's in 2013.
- Approximately two-thirds of caregivers are women and 34 percent are age 65 or older.
- Forty-one percent of caregivers have a household income of \$50,000 or less.
- Over half of primary caregivers of people with dementia take care of parents.
- It is estimated that 250,000 children and young adults between ages 8 and 18 provide help to someone with Alzheimer's disease or another dementia.
- Nearly 60 percent of Alzheimer's and dementia caregivers rate the emotional stress of caregiving as high or very high
 - Approximately 40 percent suffer from depression.
 - Alzheimer's and dementia caregivers had \$9.7 billion in additional health care costs of their own in 2014.



“Sorry the dementia statistics are not ready, they keep losing count.”

Cost to Nation

- In 2015, the direct costs to American society of caring for those with Alzheimer's will total an estimated \$226 billion, with half of the costs borne by Medicare.
- Average per-person Medicare spending for people age 65 or older with Alzheimer's and other dementias is three times higher than for seniors without dementia.
 - Medicaid payments are 19 times higher.
- Nearly one in every five Medicare dollars is spent on people with Alzheimer's and other dementias.
 - In 2050, it will be one in every three dollars.
- In 2050, Alzheimer's is projected to cost over \$1.1 trillion (in 2015 dollars).
 - A five-fold increase in government spending under Medicare and Medicaid and a nearly five-fold increase in out-of-pocket spending.

Disclosing a Diagnosis

- Most people living with Alzheimer's are not aware of their diagnosis.
- Less than half (45 percent) of seniors diagnosed with Alzheimer's disease or their caregivers report being told the diagnosis by a health care provider
 - Compared to 90 percent or more of those diagnosed with cancer and cardiovascular disease.
- Benefits of disclosing a diagnosis include better diagnosis (opportunity for a second opinion), better decision-making about their lives for both the present and the future, and better medical care.

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**“High blood pressure, high cholesterol,
high blood sugar, high anxiety...
getting high is no fun at my age!”**

Meta-analysis of modifiable risk factors for Alzheimer's disease

- Review and meta-analysis was to roundly evaluate the association between AD and its modifiable risk factors.
 - 16 906 articles were identified of which 323 with 93 factors met the inclusion criteria for meta-analysis.
- Results:
 - Grade I evidence was found for the following protective factors of AD
 - Biomedical Exposure
 - Medication
 - Estrogen
 - Statin
 - Antihypertensive medications
 - Non-steroidal anti-inflammatory drugs therapy)
 - Dietary
 - Folate
 - Vitamin E/C
 - Coffee)
 - Grade I evidence was found for the following protective factors of AD
 - Lifestyle
 - Cognitive activity,
 - Current smoking (Western population)
 - Light-to-moderate drinking
 - Stress
 - High BMI in late-life
 - Pre-existing conditions
 - History of arthritis
 - Heart disease,
 - Metabolic syndrome
 - Cancer decreasing risk

Meta-analysis of modifiable risk factors for Alzheimer's disease (results continued)

- Grade I evidence showing significantly increased risk of developing AD
 - Biochemical exposure
 - Hyperhomocysteine
 - Psychological condition
 - Depression
 - Lifestyle
 - Low education
 - High BMI in midlife
 - Low BMI in late-life
 - Pre-existing conditions
 - Frailty,
 - Carotid atherosclerosis
 - Hypertension,
 - Low diastolic blood pressure
 - Type 2 diabetes mellitus (Asian population)
 - We identified no evidence suggestive of significant association with occupational exposures.

Cognitive impairment 18 years before clinical diagnosis of Alzheimer disease dementia

- To examine the relation of performance on brief cognitive tests to development of clinically diagnosed Alzheimer disease (AD) dementia over the following 18 years in a sample of African Americans and European Americans.
- Prospective population-based sample of 2,125 participants aged 65 years and older residing in 4 Chicago neighborhoods.
 - 55% African American
 - 61% Female
- Results: Of 2,125 participants without clinical AD dementia, 442 (21%) developed clinical AD dementia over 18 years of follow-up.
 - Lower composite cognitive test scores were associated with the development of AD dementia over the duration of the study.
 - Performance on individual cognitive tests predicted development of AD dementia over 18 years
 - Episodic memory
 - Executive function,
 - Global cognition
 - These associations were consistently larger among European Americans than among African Americans.

Neuropsychiatric Symptoms as Predictors of Progression to Severe Alzheimer's Dementia and Death: The Cache County Dementia Progression Study.”

- Cache County Dementia Progression Study, the authors examined the link between clinically significant neuropsychiatric symptoms in mild Alzheimer's dementia and progression to severe dementia or death.
- Three hundred thirty-five patients with incident Alzheimer's dementia were studied.
- Results
 - Sixty-eight (20%) developed severe dementia over the follow-up period.
 - Association with more rapid progression to severe dementia
 - Psychosis (HR=2.007)
 - Agitation/aggression (HR=2.946)
 - Clinically significant neuropsychiatric symptom (HR=2.682)
 - Association with earlier death
 - Psychosis (HR = 1.537)
 - Affective symptoms (HR = 1.510)
 - Agitation/aggression (HR = 1.924)
 - Mildly symptomatic neuropsychiatric symptoms (HR 1.448)
 - Clinically significant neuropsychiatric symptoms (HR = 1.951)
- Specific neuropsychiatric symptoms are associated with shorter survival time from mild Alzheimer's dementia to severe dementia and/or death.
- The treatment of specific neuropsychiatric symptoms in mild Alzheimer's dementia should be examined for its potential to delay time to severe dementia or death.

Tetrahydrocannabinol for neuropsychiatric symptoms in dementia: A randomized controlled trial.

- To study the efficacy and safety of low-dose oral tetrahydrocannabinol (THC) in the treatment of dementia-related neuropsychiatric symptoms (NPS).
- This is a randomized, double-blind, placebo-controlled study.
 - Patients with dementia and clinically relevant NPS were randomly assigned to receive THC 1.5 mg or matched placebo (1:1) 3 times daily for 3 weeks.
 - Twenty-four patients received THC and 26 received placebo.
 - Primary outcome was change in Neuropsychiatric Inventory (NPI), assessed at baseline and after 14 and 21 days.
- **RESULTS**
 - NPS were reduced during both treatment conditions.
 - The difference in reduction from baseline between THC and placebo was not significant (mean difference NPI_{total}: 3.2, 95% confidence interval [CI] -3.6 to 10.0),
 - No significant changes in scores for agitation (Cohen-Mansfield Agitation Inventory 4.6, 95% CI -3.0 to 12.2),
 - No significant change in quality of life (Quality of Life-Alzheimer's Disease -0.5, 95% CI -2.6 to 1.6), or
 - No significant change activities of daily living (Barthel Index 0.6, 95% CI -0.8 to 1.9).
 - The number of patients experiencing mild or moderate adverse events was similar (THC, n = 16; placebo, n = 14, p = 0.36).
 - No effects on vital signs, weight, or episodic memory were observed.
- Oral THC of 4.5 mg daily showed no benefit in NPS, but was well-tolerated

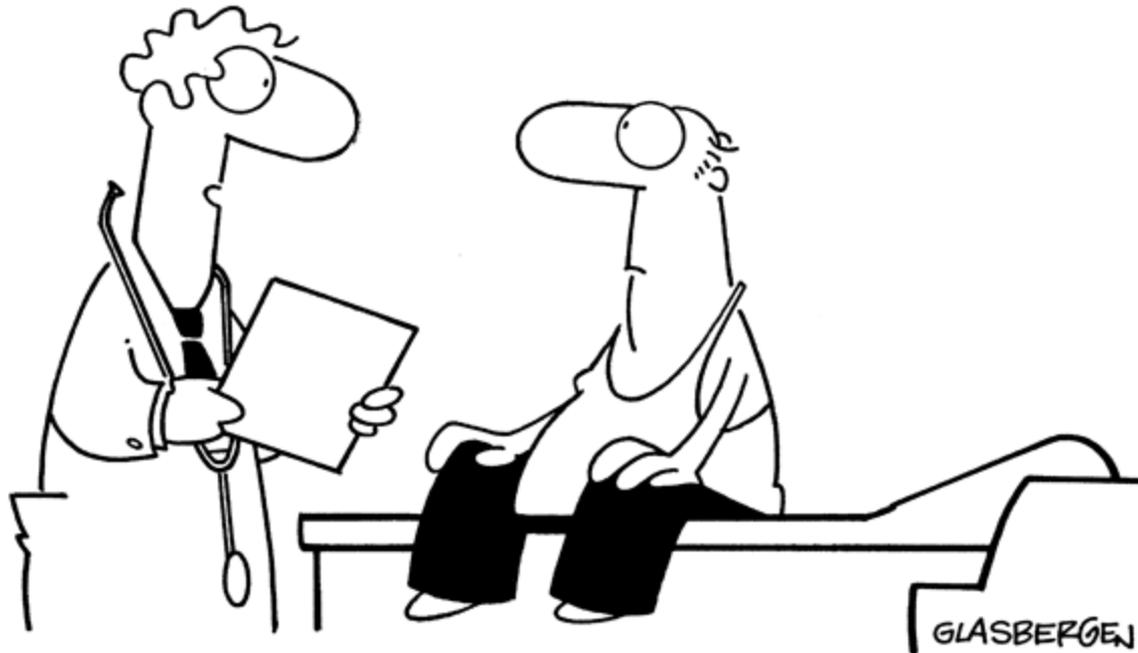
Other Neurocognitive Disorders



Modifiable Predictors of Dementia in Mild Cognitive Impairment: A Systematic Review and Meta-Analysis

- The authors searched electronic databases and references for longitudinal studies reporting potentially modifiable risk factors for incident dementia after MCI.
 - There were 76 eligible articles.
- Results
 - Diabetes and prediabetes
 - Increased risk of conversion from amnestic MCI to Alzheimer's dementia
 - Risk in treated versus untreated diabetes was lower in one study.
 - Increased risk of conversion from any-type or nonamnestic MCI to all-cause dementia.
 - Metabolic syndrome and prediabetes predicted all-cause dementia in people with amnestic and any-type MCI, respectively.
 - Diet
 - Mediterranean diet decreased the risk of conversion to Alzheimer's dementia.
 - Lower serum folate predicted conversion from any-type MCI to all-cause dementia
 - Education
 - Less formal education did not predict conversion from any-type MCI to all-cause dementia
 - Neuropsychiatric symptoms
 - Depressive symptoms predicted conversion from any-type MCI to all-cause dementia in epidemiological but not clinical studies.
 - Presence of neuropsychiatric symptoms predicted conversion from any-type MCI to all-cause dementia

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**“After age 40, all food is bad for you.
Learn to chew air and eat rocks.”**

Effect of Depression and Diabetes Mellitus on the Risk for Dementia: A National Population-Based Cohort Study

- To examine the risk for all-cause dementia among persons with depression, DM, or both compared with persons with neither exposure.
- National (Danish) population-based cohort study of 2 454 532 adults.
 - Included all living Danish citizens 50 years or older who were free of dementia from January 1, 2007, through December 31, 2013 (followed up through December 31, 2013).
 - 477 133 (19.4%) with depression
 - 223 174 (9.1%) with DM
 - 95 691 (3.9%) with both.
- Results : Depression and DM were independently associated with a greater risk for dementia, and the combined association of both exposures with the risk for all-cause dementia was stronger than the additive association.
 - 59 663 participants (2.4%) developed dementia
 - 6466 (10.8%) had DM
 - 15 729 (26.4%) had depression
 - 4022 (6.7%) had both.
- The adjusted hazard ratios for developing all-cause dementia
 - 1.83 (95% CI, 1.80-1.87) for persons with depression
 - 1.20 (95% CI, 1.17-1.23) for persons with DM
 - 2.17 (95% CI, 2.10-2.24) for those with both compared with persons who had neither exposure.
- The excess risk for all-cause dementia observed for individuals with comorbid depression and DM surpassed the summed risk associated with each exposure individually, especially for persons younger than 65 years (hazard ratio, 4.84 [95% CI, 4.21-5.55]).

Memory complaints and risk of cognitive impairment after nearly 2 decades among older women

- To investigate the association between subjective memory complaints (SMCs) and long-term risk of cognitive impairment in aging.
 - Participants were 1,107 cognitively normal, community-dwelling older women (aged 65 years and older at baseline) in a prospective study of aging.
 - SMCs were assessed shortly after baseline and repeatedly over time with the yes/no question, “Do you feel you have more problems with memory than most?”
 - Cognitive status 18 years later (normal or impaired with mild cognitive impairment or dementia) was determined by an expert panel.
- Results: SMCs are associated with cognitive impairment nearly 2 decades later among older women. SMCs may be a very early symptom of an insidious neurodegenerative disease process, such as Alzheimer disease.
 - At baseline, 8.0% of participants (n = 89) endorsed SMCs.
 - Baseline SMCs were associated with increased risk of cognitive impairment 18 years later (adjusted odds ratio [OR] = 1.7, 95% confidence interval 1.1–2.8).
 - Results were unchanged after excluding participants with depression.
 - The association between SMCs and cognitive impairment was greatest at the last SMC assessment time point
 - 18 years before diagnosis: adjusted OR = 1.7 [1.1–2.9]
 - 14 years before diagnosis: adjusted OR = 1.6 [0.9–2.7]
 - 10 years before diagnosis: adjusted OR = 1.9 [1.1–3.1]
 - 4 years before diagnosis: adjusted OR = 3.0 [1.8–5.0]

Sleep-disordered breathing advances cognitive decline in the elderly

- To examine whether the presence of sleep-disordered breathing (SDB) is associated with an earlier age at mild cognitive impairment (MCI) or Alzheimer disease (AD)-dementia onset
- Alzheimer's Disease Neuroimaging Initiative (ADNI) cohort.
 - 3 subsets with progressively stringent criteria were created in a step-wise manner.
 - Analyses were performed separately for each subset in untreated SDB+ vs SDB- and untreated SDB+ vs CPAP+ groups.
 - Age at MCI or AD-dementia onset was the main outcome variable.
- **Results:** Consistent with our hypothesis, the presence of SDB was associated with an earlier age at cognitive decline. Our findings in CPAP+ participants suggest that CPAP treatment of SDB may delay progression of cognitive impairment.
 - SDB+ patients had a younger age at MCI onset in all subsets (MC1: 72.63 vs 83.67; MC2: 72.15 vs 83.45; MC3: 77.40 vs 89.89; $p < 0.01$).
 - SDB+ patients had a younger age at AD-dementia onset only in our most conservative subset (AC3: 83.46 vs 88.13; $p < 0.05$).
 - In a combined outcome analysis, SDB+ patients had a younger age at onset to MCI or AD-dementia in all subsets.
 - In subsets 1 and 2, CPAP use delayed the age at MCI onset (CMC1: 72.63 vs 82.10; CMC2: 72.11 vs 82.10; $p < 0.01$).

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**"I'm the Apnea Fairy. I have orders to give you a wake
up call at 10:30, 10:47, 10:53, 11:02, 11:17, 11:26..."**

Traits of patients who screen positive for dementia and refuse diagnostic assessment

- Perceptions Regarding Investigational Screening for Memory in Primary Care (PRISM-PC) questionnaire to measure the characteristics of patients who screened positive for dementia but refused further diagnostic assessment.
- Survey of patients ≥ 65 years old without a diagnosis of dementia attending primary care clinics in Indianapolis, IN, in 2008 and 2009.
- Results
 - Five hundred and fifty-four individuals completed the PRISM-PC and 63 screened positive.
 - Of those, 21 (33%) accepted and 42 (67%) refused diagnostic assessment.
 - Patients who completed the diagnostic assessment were less likely to believe there are stigmas associated with dementia screening and diagnosis and were less reluctant to accept other examinations and screenings by their PCP.
 - The only significant difference in sociodemographics between the diagnostic assessment refusal and acceptance groups was living alone.
- Intervening on patients' perceptions about dementia diagnosis, misconceptions about stigmas, and providing information about benefits of early identification could potentially increase the number of patients seeking diagnostic assessment of dementia.

Criminal Behavior in Frontotemporal Dementia and Alzheimer Disease

- Retrospective medical record review of 2397 patients who were seen at the University of California, San Francisco, Memory and Aging Center between 1999 and 2012,
 - 545 patients with Alzheimer disease (AD)
 - 171 patients with behavioral variant of frontotemporal dementia (bvFTD)
 - 89 patients with semantic variant of primary progressive aphasia
 - 30 patients with Huntington disease.
- Of the 2397 patients studied, 204 (8.5%) had a history of criminal behavior that emerged during their illness.
 - 42 of 545 patients (7.7%) with AD
 - 64 of 171 patients (37.4%) with bvFTD,
 - 24 of 89 patients (27.0%) with semantic variant of primary progressive aphasia, and
 - 6 of 30 patients (20%) with Huntington disease exhibited criminal behavior.
- Criminal behavior is more common in patients with bvFTD and semantic variant of primary progressive aphasia than in those with AD and is more likely to be an early manifestation of the disorder. The appearance of new-onset criminal behavior in an adult should elicit a search for frontal and anterior temporal brain disease and for dementing disorders.
 - 14% of patients with bvFTD were statistically significantly more likely to present with criminal behavior compared with 2% of patients with AD ($P < .001$)
 - 6.4% of patients were statistically significantly more likely to exhibit violence compared with 2% of patients with AD ($P = .003$).
- Common manifestations of criminal behavior
 - bvFTD group: theft, traffic violations, sexual advances, trespassing, and public urination
 - AD group: traffic violations

Questions?

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