

Cognitive Function and Mood Disorders

Instructor: Rebecca E. Graff, ScD

Friday, March 8, 2019, 8:45am – 10:15am

Mission Hall 1105

Outline

- Dementia
- Mental Health Beyond Major Depression

DEMENTIA

Definition

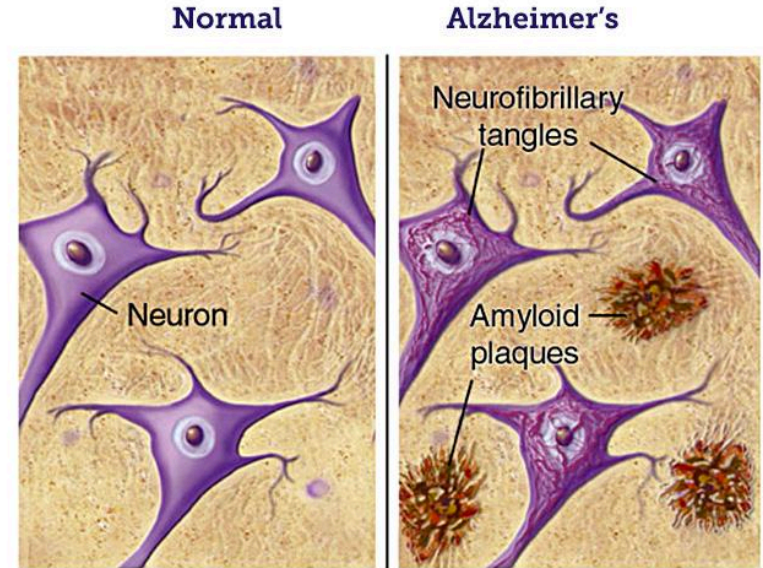
“Cognitive or behavioral (neuropsychiatric) symptoms that interfere with ability to perform usual activities, represent a decline from prior levels of function, are not explained by delirium or other major psychiatric disorder, evidence of cognitive impairment in at least two domains (memory, reasoning, visuospatial, language, personality).”

vs. Normal Cognitive Decline

- Most aspects of cognitive function decline throughout adulthood – part of normal aging
- Assessed relative to expected cognitive function by age and education
- Dementia is NOT a normal part of aging
 - Interference with daily function

Alzheimer's Disease

- 60-80% of dementia cases
- Characterized by amyloid plaques, neurofibrillary tangles, neuronal loss
 - Which can only be observed at autopsy
- Clinical criteria for diagnosis



<https://www.brightfocus.org/>

Mild Cognitive Impairment

- Criteria include:
 - Concern about a change in cognition
 - Impairment in one or more cognitive domains
 - Preservation of independence in functional abilities
 - Lack of dementia
- Stage on the way to Alzheimer's
 - Particularly amnestic MCI

Other Types of Dementia

- Vascular dementia
- Frontotemporal dementia
- Lewy body dementia
- Mixed dementia
- Among others

Prevalence of Dementia

- Globally: ~50 million cases
 - ~10 million new cases per year
 - 5-8% of individuals age 60+
 - 60% in low- and middle-income countries
- Nationally: ~6 million cases
 - ~500,000 new cases per year
 - ~10% of individuals 65+

Trends Over Age

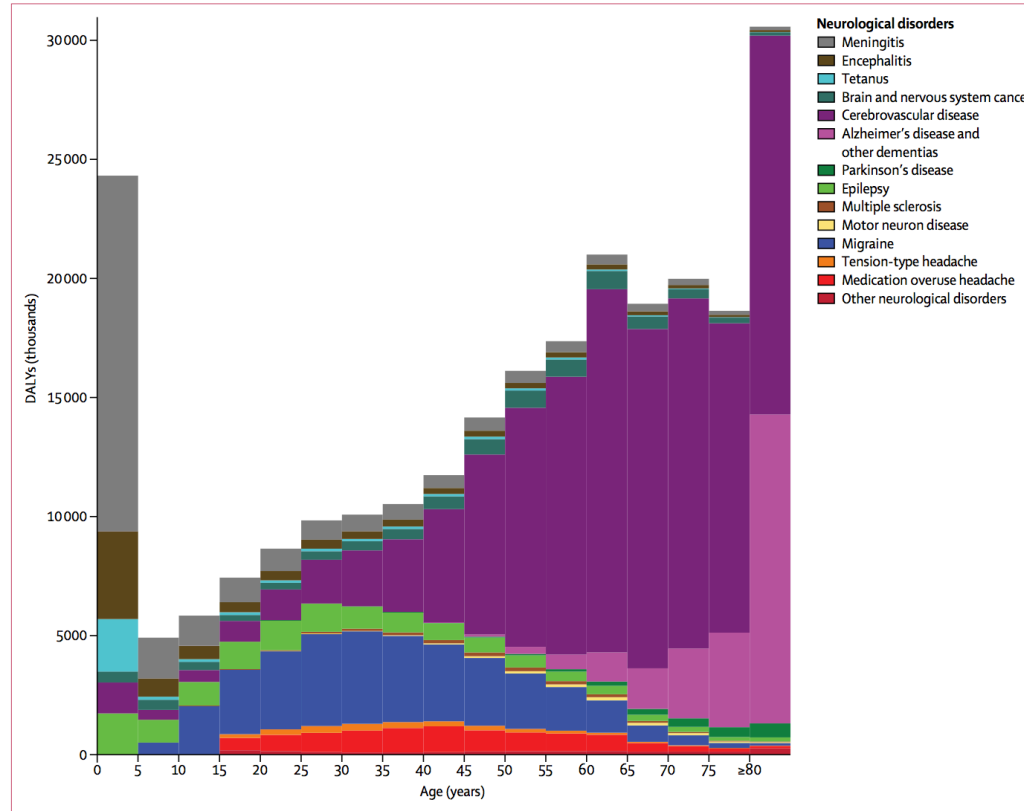


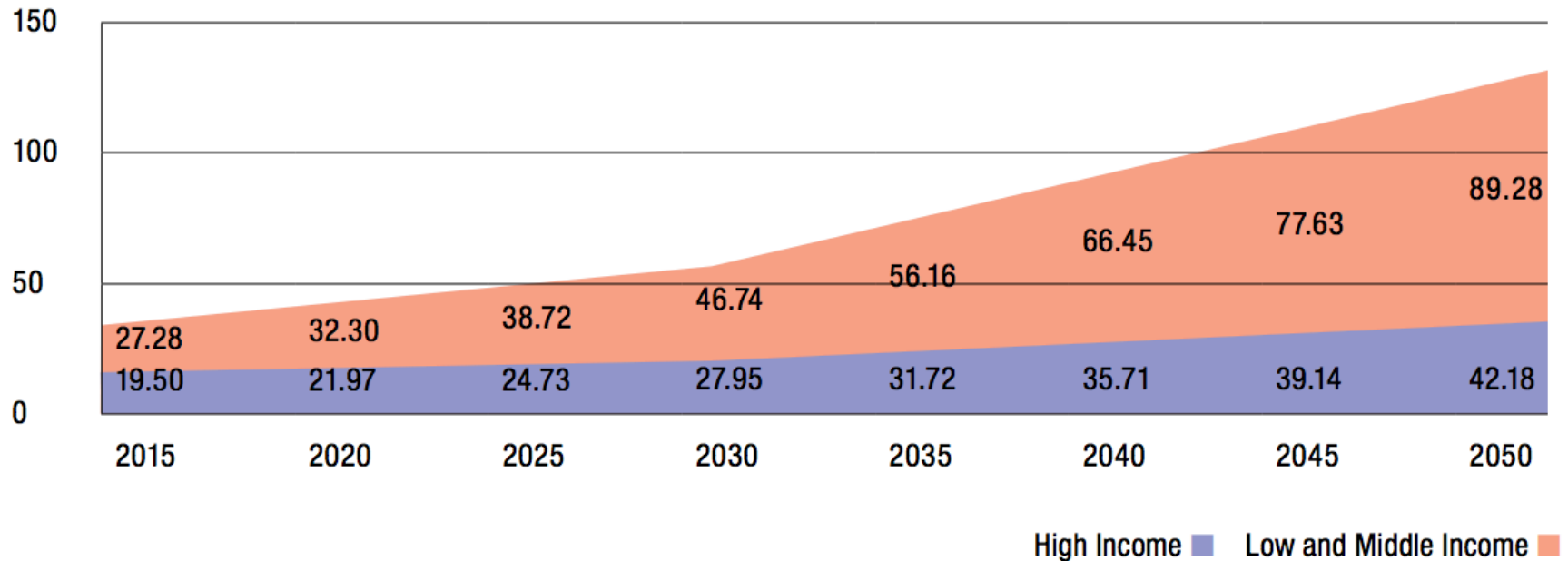
Figure 1: Global DALYs by age and neurological disorder in 2015
DALYs=disability-adjusted life-years.

Trends from Past to Present

	All-age numbers (thousands)		Age-standardised rate (per 100 000)	
	2015	Change from 1990 to 2015	2015	Change from 1990 to 2015
Alzheimer's disease and other dementias				
DALYs	23 779 (20 118 to 27 886)	98.4% (95.0 to 101.9)	396 (334 to 464)	−5.7% (−7.2 to −4.2)
Deaths	1908 (1587 to 2229)	114.9% (111.1 to 119.6)	32 (27 to 38)	−3.4% (−4.8 to −1.4)
Prevalence	45 956 (40 179 to 52 656)	111.7% (109.1 to 114.2)	761 (663 to 876)	2.4% (1.7 to 3.2)

Trends from Present to Future

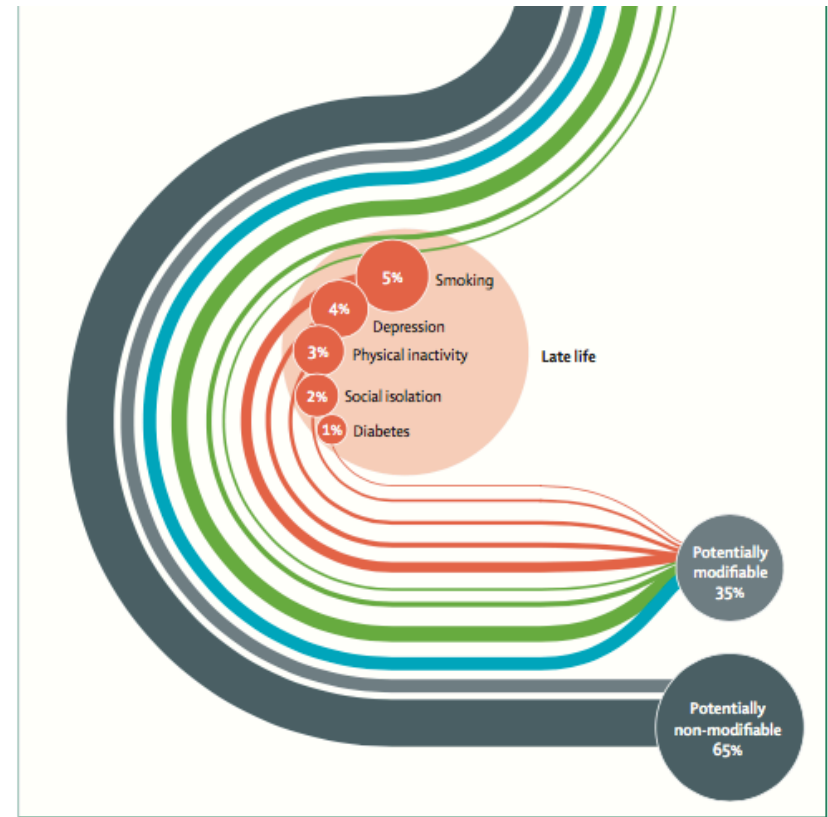
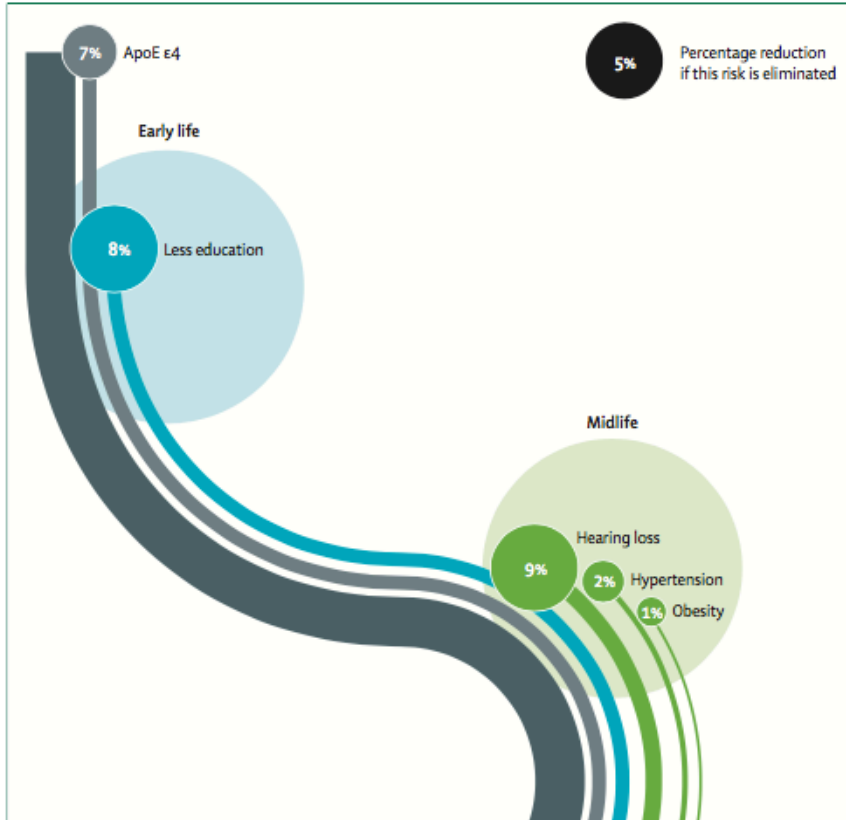
The growth in numbers of people with dementia (millions) in high income (HIC) and low and middle income countries (LMIC)



Risk Factors

- Age
- Female sex
- Family history
- Genetics
- Latino / African Ancestry
- Cardiovascular factors
- Hearing loss
- Depression
- Physical inactivity
- Smoking
- Unhealthy diet
- Excessive alcohol
- Head injury
- Sleep dysfunction

From the Life Course Perspective



Discussion:

**WHAT METHODOLOGICAL ISSUES
WOULD YOU EXPECT IN STUDIES OF
DEMENTIA?**

MENTAL HEALTH BEYOND MAJOR DEPRESSION

Other Mood Disorders

- Dysthymia (i.e., persistent depressive disorder)
- Subthreshold depression (i.e., minor depression / significant depressive symptoms)
- Bipolar disorder (i.e., manic-depressive disorder)

12-Month Prevalence

12-Month Disorder	Total (N=2575)	55-64 y % (SE) (n=1114)	65-74 y % (SE) (n=813)	75-84 y % (SE) (n=526)	≥ 85 y % (SE) (n=122)	Rao-Scott $\chi^2_{[df]}$	P Value
Mood Disorders							
Any mood	4.9(0.4)	7.6(0.9)	3.6(0.6)	1.8 (0.6)	2.4(1.4)	28.2 _[3]	<.001
Major depressive disorder	4.0(0.4)	6.2(0.8)	3.1(0.6)	1.1(0.5)	1.8(1.3)	25.9 _[3]	<.001
Dysthymia	0.8(0.3)	1.2(0.6)	0.5(0.2)	0.5(0.3)	0.5(0.6)	3.4 _[3]	.34
Bipolar I or II disorder ^a	0.9(0.2)	1.4(0.4)	0.5(0.3)	0.7(0.4)	...	...	...

Anxiety Disorders

- Phobias
- Posttraumatic stress disorder
- Generalized anxiety disorder
- Panic disorder

12-Month Prevalence

12-Month Disorder	Total (N=2575)	55-64 y % (SE) (n=1114)	65-74 y % (SE) (n=813)	75-84 y % (SE) (n=526)	≥ 85 y % (SE) (n=122)	Rao-Scott $\chi^2_{[df]}$	P Value
Anxiety Disorders							
Any anxiety ^b	11.6(0.7)	16.6(1.2)	8.9(1.1)	6.0(0.9)	8.1(2.5)	52.5 _[3]	<.001
Panic disorder	1.3(0.3)	2.0(0.6)	0.6(0.3)	1.0(0.4)	0.5(0.5)	8.8 _[3]	.03
Agoraphobia without panic	0.8(0.2)	1.4(0.4)	0.5(0.3)	0.4(0.3)	...	...	...
Specific phobia	6.5(0.5)	8.8(0.9)	4.9(0.9)	4.4(0.9)	5.1(2.1)	15.5 _[3]	.001
Social phobia	3.5(0.4)	5.1(0.7)	3.1(0.6)	1.5(0.5)	...	...	...
Generalized anxiety disorder	2.0(0.3)	3.2(0.5)	1.4(0.5)	0.8(0.3)	1.8(1.2)	12.7 _[3]	.005
Posttraumatic stress disorder ^c	2.1(0.4)	4.7(0.9)	0.6(0.2)	0.1(0.1)	0.7(0.6)	74.8 _[3]	<.001

Alcohol Use Disorder

- Problem use (i.e., abuse) and dependency consolidate in the DSM-5
- Mild, moderate, and severe subclassifications

Prevalence of Subthreshold Symptoms

Table 32.1 Prevalence of mental health problems in men and women across different age groups in the Longitudinal Aging Study Amsterdam

	Men			Women		
	55–65 years (n=490)	65–75 years (n=456)	75–85 years (n=560)	55–65 years (n=526)	65–75 years (n=517)	75–85 years (n=558)
Mental health problems						
Subthreshold symptoms						
Subthreshold depression ^b	8.2%	8.1%	13.2%	9.7%	14.1%	21.0%
Subthreshold anxiety ^c	5.3%	4.2%	4.5%	6.7%	7.7%	7.2%
Excessive alcohol use (≥ 3 drinks/day)	12.5%	7.8%	4.2%	1.7%	1.1%	0.2%

Risk Factors

- Personal history
- Negative life events
- Genetics
- Relationship losses / changes
- Personality
- Chronic illness / impairments

Discussion:

**WHAT METHODOLOGICAL ISSUES
WOULD YOU EXPECT IN STUDIES OF
MOOD AND ANXIETY DISORDERS?**

Next Week:

DEBATE!