A PUBLIC HEALTH APPROACH TO ALZHEIMER’S AND OTHER DEMENTIAS

ALZHEIMER’S & OTHER DEMENTIAS – THE BASICS
LEARNING OBJECTIVES

- Define cognitive health
- Define and differentiate between dementia and Alzheimer’s
- List at least 5 early signs of Alzheimer’s
- Describe the changes that occur during the course of Alzheimer’s
- Describe the role of caregivers
What is cognitive health?
Cognition: the ability to think, learn, and remember

Cognitive health continuum: “optimal functioning” to severe disability
The brain changes as it ages

- Increase in wisdom and expertise
- Speed of processing, making decisions, remembering may slow
- Normal part of aging

Cognitive Aging \(^{2,3,4}\)
MILD COGNITIVE IMPAIRMENT (MCI)\textsuperscript{5,6}

- Difficulty with cognitive processes
- Not severe enough to interfere with daily life
- Increased risk of Alzheimer’s or dementia
- May be caused by external factors (vitamin B12 deficiency, depression)
COGNITIVE IMPAIRMENT

- Difficulty with cognitive processes that affect everyday life
- Spans wide range of functioning
- Can occur as a result of Alzheimer’s, dementia, stroke, traumatic brain injury
Dementia

- Decline in mental ability severe enough to interfere with daily life
- Not a specific disease
- Not normal aging
- Caused by damage to brain cells from disease or trauma
- Many dementias are progressive
Identified in 1906 by Dr. Alois Alzheimer

Examined brain of woman who died after living with profound memory loss

Found abnormal clumps (plaques) and tangled fibers (tangles) in the brain
ALZHEIMER’S OVERVIEW

- Most common cause of dementia
- 60% - 80% of cases
- Progressive – symptoms gradually worsen over number of years
ALZHEIMER’S CAUSES

- Precise changes in brain largely unknown
- Probably develops as a result of complex interactions among:
  - Age
  - Genetics
  - Environment
  - Lifestyle
  - Coexisting medical conditions
ALZHEIMER’S PHYSICAL BRAIN CHANGES

- Brain shrinks dramatically
  - Nerve cell death
  - Tissue loss
- Plaques: abnormal clusters of protein fragments
- Tangles: twisted strands of another protein
DISCUSSION QUESTION 2

What are the characteristics of Alzheimer’s?
1. Memory loss that disrupts daily life
2. Challenges in planning or solving problems
3. Difficulty completing familiar tasks
4. Confusion with time or place
5. Trouble understanding visual images and spatial relationships
10 Early Signs of Alzheimer’s (continued)

6. New problems with words in speaking or writing
7. Misplacing things and losing the ability to retrace steps
8. Decreased or poor judgment
9. Withdrawal from work or social activities
10. Changes in mood and personality
STAGES OF ALZHEIMER’S

- Average lifespan 4-8 years after diagnosis; as long as 20 years
- Progresses slowly in 3 stages:
  - Mild (early-stage)
  - Moderate (middle-stage)
  - Severe (late-stage)
MILD ALZHEIMER’S (EARLY-STAGE)\textsuperscript{16}

- Able to function independently
- Common difficulties:
  - Forgetting familiar words
  - Losing everyday objects
  - Trouble remembering names
  - Greater difficulty performing tasks
  - Forgetting material just read
  - Increasing trouble with planning, organizing
MODERATE ALZHEIMER’S (MIDDLE-STAGE)

- Requires increasing care
- Symptoms include:
  - Forgetfulness of personal history
  - Confusion about place or time
  - Need for help with bathing, toileting, dressing
  - Changes in sleep patterns
  - Increased risk of wandering
  - Personality and behavioral changes
SEVERE ALZHEIMER’S (LATE-STAGE)\textsuperscript{18}

- Typically longest stage
- Requires full-time care
- Loss of awareness of recent experiences and surroundings
- Changes in physical abilities (walking, sitting, swallowing)
- Vulnerable to infections
RISK FACTORS

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
#1 risk factor is advancing age

Risk doubles every 5 years after age 65

1 in 3 people age ≥ 85
Younger-Onset Alzheimer’s Disease

- Affects people younger than 65
- Many are in their 40s and 50s
- 200,000 have younger onset (in U.S.)
- Up to 5% of population with Alzheimer’s
RISK FACTORS: FAMILY HISTORY, EDUCATION

- Family history
- Environmental factors
- Years of formal education
African-Americans: 2 times greater risk

Hispanics: 1.5 times greater risk

Cardiovascular risk factors more common

Lower levels of education, socioeconomic status
RISK FACTORS: WOMEN

- 2/3 of affected population
- 16% of women age ≥ 71 (11% of men)
- After age 65, have more than 1 in 5 chance (1 in 11 for men)
MODIFIABLE RISK FACTORS: HEAD TRAUMA

- Moderate and severe traumatic brain injury
  - Moderate injury: 2.3 times greater risk
  - Severe injury: 4.5 times greater risk
- Risk remains for years after injury
MODIFIABLE RISK FACTORS: LIFESTYLE

- Increases risk
  - Current smoking
  - Midlife obesity
- Decreases risk
  - Physical activity
  - Heart-healthy diets: DASH, Mediterranean diet
  - Mental and social activity
MODIFIABLE RISK FACTORS: CARDIOVASCULAR

- Heart-head connection
- Cardiovascular risk factors:
  - High blood pressure in midlife
  - Heart disease
  - Stroke
  - Diabetes
TREATMENT & MANAGEMENT

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
No single test

Medical evaluation
- Medical history
- Mental status testing
- Information from family and friends
- Physical and neurological exams
- Rule out other causes
TREATING & MANAGING ALZHEIMER’S

- No cure
- Drug and non-drug treatments
- Goals of existing treatment
  - Maintain quality of life
  - Maximize functioning in daily activities
  - Foster safe environment
  - Promote social engagement
ALZHEIMER’S: CO-MORBIDITIES\textsuperscript{34,35}

- Additional chronic conditions (e.g., heart disease, diabetes, depression)
- Difficult to manage
- Higher rates of hospitalizations and costs
- Preventable hospitalizations
ALZHEIMER’S: UNIQUE ASPECTS

- Financial hardship
  - May lose income and savings
  - Increased reliance on public programs
- Stigma
- Vulnerability to abuse
- Caregiver burden
Types of care activities include daily living activities, medication management, financial management.

Level of care needed increases and often results in complete dependence.

Caregiving has significant physical and emotional stress.
ROLE OF PUBLIC HEALTH

- 4 key ways public health can have an impact:
  - Surveillance/monitoring
  - Risk reduction/primary prevention
  - Early detection and diagnosis
  - Safety and quality of care
DEMENTIA CAPABLE SYSTEMS AND DEMENTIA FRIENDLY COMMUNITIES

- Dementia capable systems
  - Support services
  - Workforce training
- Dementia friendly communities
For more information, please visit:

Alzheimer’s Association: http://www.alz.org

CDC’s Alzheimer’s Disease and Healthy Aging Program: https://www.cdc.gov/aging/
Competencies

- **Academy for Gerontology in Higher Education (AGHE):**
  - 1.2.1 Distinguish normal biological aging changes from pathology including genetic factors.
  - 1.2.4 Recognize common late-life syndromes and diseases and their related bio-psycho-social risk and protective factors.

- **Council on Education for Public Health (CEPH) Foundational Competencies:**
  - 2. Locate, use, evaluate, and synthesize public health information (bachelors level)
  - 4. Interpret results of data analysis for public health research, policy, or practice (masters level)

- **Council on Linkages Between Academia and Public Health Practice:**
  - 1A1. Describes factors affecting the health of a community (e.g., equity, income, education, environment)
REFERENCES

3 National Institute on Aging. (n.d.) Do Memory Problems Always Mean Alzheimer’s Disease?
REFERENCES 2

REFERENCES 3