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 common symptoms of Alzheimer’s
- Describe the changes that occur during the course of Alzheimer’s
- Identify at least 3 risk factors associated with Alzheimer’s
- Describe the role of caregivers
Association for Gerontology in Higher Education (AGHE):

1.2.1 Distinguish normal biological aging changes from pathology including genetic factors.

1.3.3 Demonstrate knowledge of signs, symptoms, and impact of common cognitive and mental health problems in late life (e.g., dementia, depression, grief, anxiety).

1.2.4 Recognize common late-life syndromes and diseases and their related bio-psycho-social risk and protective factors.

Association of Schools and Programs of Public Health (ASPPH):

Domain 1: Describe risk factors and modes of transmission for infectious and chronic diseases and how these diseases affect both personal and population health.
National Association of Chronic Disease Directors (NACDD):

Domain 7: Discuss the underlying causes and management of chronic diseases, including behavioral, medical, genetic, environmental and social factors.

Domain 7: Articulate key chronic disease issues.

Domain 7: Describe socioeconomic and behavioral determinants of health disparities.

National Commission for Health Education Credentialing, Inc. (NCHEC):

7.1.1 Identify current and emerging issues that may influence health and health education
DISCUSSION QUESTION

What is cognitive health?
COGNITIVE HEALTH

- Cognition: the ability to think, learn, and remember
- Cognitive health continuum: “optimal functioning” to severe disability
- Linked to brain health

1 Centers for Disease Control and Prevention, Division of Healthy Aging. What is a Healthy Brain? New Research Explores Perceptions of Cognitive Health Among Diverse Older Adults.
COGNITIVE AGING

- The brain changes as it ages
- Increase in wisdom and expertise
- Speed of processing, making decisions, remembering may decline
- Normal part of aging

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MILD COGNITIVE IMPAIRMENT (MCI)

- 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)

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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

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DEMENTIA

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
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

TYPES OF DEMENTIA

- Alzheimer’s disease
- Vascular dementia
- Dementia with Lewy Bodies (DLB)
- Mixed dementia
- Parkinson’s disease
- Frontotemporal dementia
- Creutzfeldt-Jakob disease
- Normal pressure hydrocephalus
- Huntington’s disease
- Wernicke-Korsakoff Syndrome

VASCULAR DEMENTIA

- 2\textsuperscript{nd} most common cause of dementia
- 20% - 30% of cases
- Caused by conditions that block or reduce blood flow to the brain
- Symptoms may occur suddenly following strokes or slowly as a result of cumulative damage

ALZHEIMER’S DISEASE

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
ALZHEIMER’S DISEASE: OVERVIEW

- Most common type of dementia
- 60% - 80% of cases
- Progressive – symptoms gradually worsen over number of years

ALZHEIMER’S DISEASE: HISTORY

- Identified in 1906 by Dr. Alois Alzheimer
- Examined brain of woman who died after mental illness
- Found abnormal clumps (plaques) and tangled fibers (tangles)

ALZHEIMER’S DISEASE:
PHYSICAL CHANGES

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

ALZHEIMER’S DISEASE: CAUSES

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

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.)
- 4% of population with Alzheimer’s

What are the characteristics of Alzheimer’s disease?
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

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 DISEASE

- 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)

- 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)

- 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
RISK FACTORS: AGE

- #1 risk factor is advancing age
- Approximately doubles every 5 years after age 65
- 1 in 3 people age ≥85

22 Alzheimer’s Association, 2015 Alzheimer’s Disease Facts and Figures, March 2015
RISK FACTORS: FAMILY HISTORY, EDUCATION

- Family history
- Hereditary/Genetics
- Education, cognitive engagement

RISK FACTORS: RACE & ETHNICITY

- African-Americans: 2 times greater risk
- Hispanics: 1.5 times greater risk
- Cardiovascular risk factors more common
- Lower levels of education, socioeconomic status

24 Alzheimer’s Association (2016) Alzheimer’s Disease Facts and Figures
RISK FACTORS: WOMEN

- 2/3 of affected population
- 16% of women age ≥ 71 (11% of men)
- At age 65 have more than 1 in 6 chance (1 in 11 for men)
- Age ≥ 60, are twice as likely to develop Alzheimer’s than breast cancer

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
DIAGNOSING ALZHEIMER’S DISEASE

- 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
- Primary goals of treatment:
  - Maintain quality of life
  - Maximize function in daily activities
  - Enhance cognition, mood, behavior
  - Foster safe environment
  - Promote social engagement

32 Alzheimer’s Association. Health Care Professionals and Alzheimer’s. Accessed June 8, 2015 from website:
ALZHEIMER’S: CO-MORBIDITIES

- Additional chronic conditions (e.g., heart disease, diabetes, depression)
- Difficult to manage
- Higher rates of hospitalizations and costs
  - 3 times as many hospital stays
  - 3 times average Medicare costs
- Preventable hospitalizations

UNIQUE ASPECTS

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
ALZHEIMER’S: UNIQUE ASPECTS

- Financial hardship
  - May lose income and savings
  - Increased reliance on public programs
- Stigma
- Vulnerability to abuse

CAREGIVERS

ALZHEIMER’S AND OTHER DEMENTIAS – THE BASICS
ALZHEIMER’S: CAREGIVERS

- Responsibilities:
  - Dressing, bathing, toileting, feeding
  - Shopping, meal preparation, transportation
  - Medication
  - Financial management
  - Emotional support
- Increasing levels of care
- Results in complete dependence

CAREGIVERS: CHALLENGES

- Physical, financial, psychological challenges
  - $10.2 billion additional annual health care costs (2015)
  - 60% rate emotional stress as high or very high
  - 40% suffer from depression

CONCLUSION: KEY POINTS

- Disease likely develops as result of multiple factors
- Symptoms worsen over time; average lifespan 4-8 years (up to 20)
- Risk factors include: age, family history, head trauma, education, lifestyle, cardiovascular conditions
- African-Americans, Hispanics, women more likely to develop
ROLE OF PUBLIC HEALTH

- 3 key public health intervention tools:
  - Surveillance/monitoring
  - Primary prevention (risk reduction)
  - Early detection and diagnosis
DEMENTIA CAPABLE SYSTEMS AND DEMENTIA FRIENDLY COMMUNITIES

- Dementia capable systems
  - Public health research and translation
  - Support services
  - Workforce training
- Dementia friendly communities
For more information, please visit the Alzheimer’s Association website at: http://www.alz.org