Physical and Cognitive Development in Late Adulthood

Chapter 17
Lecture Overview

- Age 65 until death
- Variability in Late Adulthood
- Physical Changes
- Mental Health
- Cognitive Changes
VARIABILITY IN LATE ADULTHOOD

Centenarians (100 years old or more)

- Fastest-growing population segment
- Currently, there are 60,000 centenarians in the U.S.
- There may be over 800,000 American centenarians by 2050.
VARIABILITY IN LATE ADULTHOOD Characteristics of the Elderly Population

- **Gerontology**: the scientific study of aging
- Life expectancy: males = 75; females = 80
- Increases as adults get older: if a man is 65, his life expectancy goes to 80; if 80, it goes to 90. A 65-year-old woman can live to 85.
- White Americans who are 65 to 74 years old have longer life expectancies than African Americans of the same age.
- By age 75, life expectancies of whites and African Americans are the same.
- Young old (60–75)
- Old old (75–85)
- Oldest old (85 and older)
Social Security

THE COMING DEMOGRAPHIC CRISIS

In 2008, Social Security pensions exceeded income from Social Security taxes.

Options
- Decrease benefits to recipients.
- Increase taxes to workers.

Reactions
- Public opposition to both options; other options were suggested.
- The public wants autonomy over investments and guaranteed retirement income.
- Without a solution, bankruptcy may occur.

How will this affect you? Your parents? Your grandparents?
Critical Thinking

Decide which of these two statements you most agree with and think about how you would defend your position:

1. Having autonomy over how my Social Security taxes are invested is more important to me than having a guaranteed income when I reach retirement age.

2. Having a guaranteed income when I reach retirement age is more important to me than having autonomy over how my Social Security taxes are invested.
Overview of Results

• Most rate their health as good.
• Despite health challenges, elders remain emotionally resilient.
• Adults with cardiovascular disease and Alzheimer’s disease show earlier declines in mental abilities.
VARIABILITY IN LATE ADULTHOOD

Limitations on Activities

- **Daily Living Tasks**
  - Activities of daily living (ADLs)
  - Instrumental activities of daily living (IADLs)

- **Rise of Disabilities with Age**
  - Fifty percent of people over age seventy-five have difficulties with ADLs.
VARIABILITY IN LATE ADULTHOOD

Limitations on Activities

- **Disability**: limitations on someone’s ability to perform certain roles and tasks, especially self-help tasks.
- Disabilities rise with age.
- Half of those over age seventy-five have some disabilities with ADL.
- Arthritis and hypertension are the most common.
- Women are considerably more likely than men to suffer from arthritis.
- Rates of disability among the old old and oldest old have declined in recent years.

- **Categories of daily tasks**
  - ADL: activities of daily living. E.g., bathing, dressing, using the toilet.
  - IADL: instrumental activities of daily living. E.g., managing money.
VARIABILITY IN LATE ADULTHOOD
Individual Heredity

- Twin Studies: Identical twins are more similar in length of life than fraternal twins are.

- Family History of Longevity: Adults whose parents and grandparents were long-lived tend to live longer.

- Chronic Illness: Long-lived individuals have lower rates of chronic illnesses such as diabetes.
VARIAIBILITY IN LATE ADULTHOOD
Health Habits

Does health matter?

- Health habits that predict longevity change very little with age.
- Most crucial variable = physical exercise
- Eating patterns
PHYSICAL CHANGES
Brain and Nervous System

Four Main Changes:

- Between ages 60 and 90, adults with higher levels of education show significantly less atrophy of the cerebral cortex.
- Reaction time increases for everyday tasks as synaptic speed slows.
- Loss of neurons occurs, but they are not as critical for cognitive functioning as was once believed.
- Plasticity decreases and reaction time increases.
PHYSICAL CHANGES
The Senses and Other Bodily Organs

- **Vision**
  - Blood flow to eyes decreases, enlarging the “blind spot” and reducing the field of vision.
  - Vision loss has greater negative effects on an elderly adult’s sense of wellbeing than it does for other ages.

- **Hearing**
  - Gradual hearing loss
  - Men work in environments with higher noise levels.
  - Auditory problems are more often experienced by men.

- **Smell/Taste**
  - The ability to taste four basic flavors does not seem to decline with age, but less saliva is secreted and elders report that flavors seem blander. This may be due to loss of sense of smell.
  - Sense of smell deteriorates with age.
THEORIES OF BIOLOGICAL AGING

Longevity

- Each chromosome in the human body has at its tip a string of repetitive DNA called a telomere.
- Maximum human lifespan is 110–120 years.

- Hayflick limit
  - Each species is subject to a time limit beyond which cells simply lose the capacity to replicate themselves.

- Genetic limits argument
  - "Timekeeping mechanism" for the organism
  - The number of telomeres reduces slightly each time a cell divides.
  - There may be crucial number of telomeres—if the number is too low, disease and death follow quickly.
PHYSICAL CHANGES

Behavioral Effects of Physical Changes

- **General Slowing**
  - Dendrite loss
  - Loss of muscle elasticity
  - Decline in speed of nerve impulses
  - Changes in temperature sensitivity
PHYSICAL CHANGES

Sleeping and Eating Patterns

Sleeping

• Shifts in sleep patterns - bed/wake-up earlier
• Wake more frequently at night
• Show decreases in REM sleep

Eating

• Loss of feelings of satiety, thus overeat
• May become rigid in meal times and food selection to compensate
Physiological changes
Sexual Activity

- Decreases in sexual activity have many causes.
  - Seventy percent of young-old and about half of old-old people continue to have sex.
  - Decline in testosterone
  - Certain medications or physical pain
Alzheimer’s Disease

- Alzheimer’s disease (neurocognitive disorder due to Alzheimer’s): very severe form of dementia
  - Early stages become evident very slowly.
  - As the disease progresses, more serious declines and changes appear.
  - Rate of decline related to age at onset
  - Eventual inability to remember names of common objects or perform common activities
  - One’s ability to communicate declines.
  - High incidence of depression
MENTAL HEALTH
Alzheimer’s Disease

- **Treatments**
  - Galantamine
  - Increases in amounts of some neurotransmitters can slow progress of the disease.
  - Use of anti-inflammatory medication, such as aspirin
  - Training in use of specific everyday strategies and tasks that can improve memory
MENTAL HEALTH
Depression

Prevalence and Demographics

- Older adults are greater risk.
- Roughly 14 percent of 65–69-year-olds and 19 percent of those 85 years old and older suffer from depression.
- More common among less-educated adults regardless of other factors, such as ethnicity.
MENTAL HEALTH

Depression

- Therapy and medications are the same for older adults. They may benefit from psychotherapy that stresses optimism as a coping strategy.

- **Risk factors**
  - Inadequate social support and income
  - Depressed women outnumber depressed men two to one.
  - Women respond to the accumulation of everyday stressors.
  - Men respond to traumatic events.
  - Poverty puts the elderly at high risk.
  - Emotional loss or absence of significant others
  - Persistent health concerns

- **Strongest risk factor**
  - The more disabling the conditions, the more depressive symptoms older adults display.
MENTAL HEALTH

Suicide

- Older white men have the highest suicide risk.
- Suicide rates increase in older men with age but remain stable in women.
- Older men have several risk factors that may lead them to commit suicide.
- Loss of economic status may trouble men more.
- Death of a spouse plays a role for men.
- Idea that one is a burden to others, especially if health is poor.
COGNITIVE CHANGES

Memory

- Forgetfulness increases as we age.
- Short-term memory capacity begins to be a problem, especially when handling multiple tasks.
- Responses that require cognitive speed show greater decline.
- Strategy learning helps older adults improve memory functions.
- Suggests that learning process takes longer