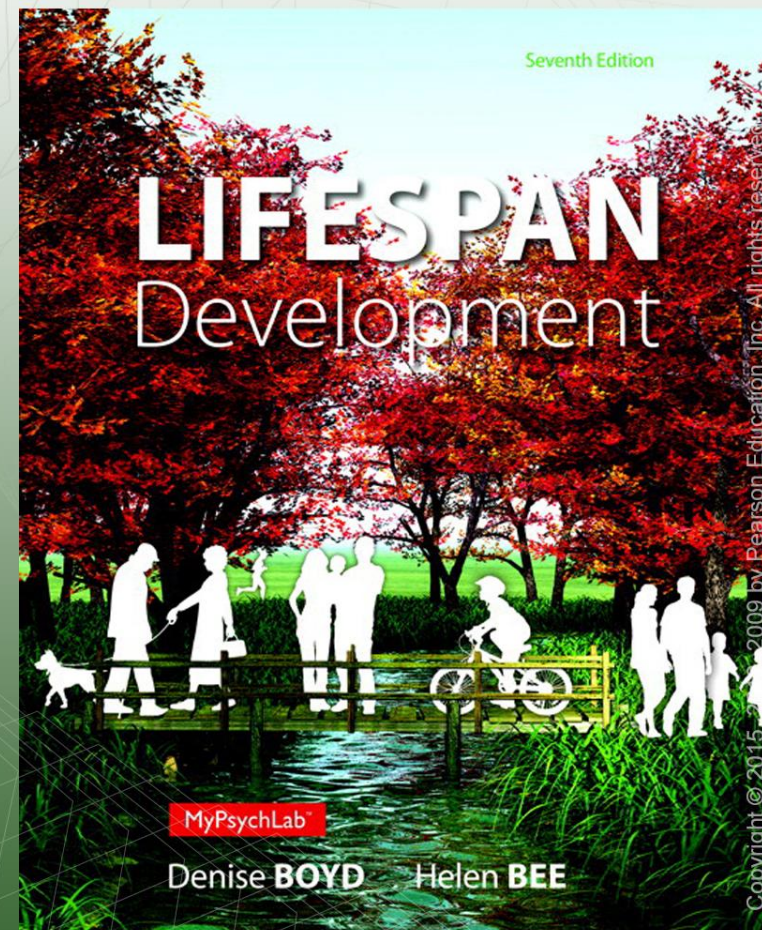


Chapter 13:

Physical and Cognitive
Development in Early Adulthood



LEARNING OBJECTIVES

- 13.1** What is the difference between primary and secondary aging?
- 13.2** What changes in the brain take place in early adulthood?
- 13.3** How do other body systems change during early adulthood?
- 13.4** What habits and personal factors are associated with good health?
- 13.5** What are some of the viral and bacterial STDs that afflict young adults?
- 13.6** What are the causes and effects of intimate partner abuse?

LEARNING OBJECTIVES (con't)

- 13.7** Which mental disorders occur most frequently in young adulthood?
- 13.8** What is the difference between physical and psychological substance dependence?
- 13.9** What types of postformal thought have developmentalists proposed?
- 13.10** How do the concepts of crystallized and fluid intelligence help to explain age-related changes in IQ scores?
- 13.11** What are some of the ways in which college attendance affects individual development?
- 13.12** What is the impact of gender, ethnicity, and disability on the college experience?

IN THIS CHAPTER



- Physical Functioning



- Health and Wellness



- Cognitive Changes



- Post-Secondary Education

PHYSICAL FUNCTIONING

Types of Aging

Definitions

- *Primary aging*: gradual and inevitable process of bodily deterioration throughout life
- *Secondary aging*: preventable processes from disease and poor health practices

BENEFITS OF LIFESTYLE CHANGES

TABLE 13.1 Benefits of Lifestyle Changes

Lifestyle Change	Benefits
If overweight, lose just 10% of your body weight.	Reduction in triglyceride levels; decrease in total cholesterol; increase in HDL (“good” cholesterol); significant reduction in blood pressure; decreased risk of diabetes, sleep apnea, and osteoarthritis (Fransen, 2004; Wee, Hamel, Dans, & Phillips, 2004).
Add 20 to 30 grams of fiber to your diet each day.	Improved bowel function; reduced risk of colon cancer and other digestive-system diseases; decrease in total cholesterol; reduced blood pressure; improved insulin function in both diabetics and nondiabetics (Mayo Clinic, 2005).
Engage in moderate physical activity every day (e.g., walk up and down stairs for 15 minutes; spend 30 minutes washing a car).	Reduced feelings of anxiety and sadness; increased bone density; reduced risk of diabetes, heart disease, high blood pressure, and many other life-shortening diseases (Centers for Disease Control and Prevention [CDC], 2007a).
Stop smoking at any age, after any number of years of smoking.	<i>Immediate:</i> Improved circulation; reduced blood level of carbon monoxide; stabilization of pulse rate and blood pressure; improved sense of smell and taste; improved lung function and endurance; reduced risk of lung infections such as pneumonia and bronchitis. <i>Long-term:</i> Reduced risk of lung cancer (declines substantially with each year of abstinence); decreased risk of other smoking-related illnesses such as emphysema and heart disease; decreased risk of cancer recurrence in those who have been treated for some form of cancer (National Cancer Institute, 2000).
Get recommended annual or 5-year screenings beginning at these ages.	<i>Women:</i> (21) Chlamydia, cervical cancer, screenings if sexually active; (35) cholesterol test; (50) mammogram, colorectal exam; (65) vision, hearing tests <i>Men:</i> (30) EKG, cholesterol test; (40) PSA test for prostate cancer; (50) colorectal exam; (65) vision, hearing tests

PHYSICAL FUNCTIONING

Aging and Health

Health Differences

- Income-related variations in social environments and individual behavior
- Many of the same factors contribute to economic differences and health habits.
- Links between social class and secondary aging are complex.

THE BRAIN AND NERVOUS SYSTEM

Early Adulthood

Nervous System

- Growth spurts in brain
- Response inhibition; cortex control of the limbic system
- New neuronal production

GENDER DIFFERENCES IN THE BRAIN

Gray Matter

- Men have a higher proportion of white matter than women do.

White Matter

- Men have a lower proportion of white matter in the left brain than in the right brain.
- Proportions of gray matter and white matter in the two hemispheres are equal in women's brains.

Neuroimaging Findings

- More subtle differences

Critical Analysis

1. In what ways might the experiences of men and women contribute to gender differences in the brain?
2. How might the research on gender differences in the brain be distorted and misused to justify discrimination against women?

THE BRAIN AND NERVOUS SYSTEM

Early Adulthood

Speed

- Gradual loss of speed
- Every bodily function affected
- Gradual changes at neuronal level

THE BRAIN AND NERVOUS SYSTEM

Early Adulthood

_____ is associated with individual differences in performance on verbal tasks for males, but not for females.

Do you know?

THE BRAIN AND NERVOUS SYSTEM

Early Adulthood

General Physical Skills

- Better physical skills on all measures when compared to older adults

Can you hypothesize what some of these measures might be?

OTHER BODY SYSTEMS

Early Adulthood

Declines Physical Functioning

- Changes are balanced between physical demand and physical capacity.
- Losses that appear later in life start in early adulthood.

OTHER BODY SYSTEMS

Early Adulthood

Heart and Lungs

- Systematic decline with age of maximum oxygen uptake (VO_{2max})
- Reflects cumulative effects of sedentary lifestyle
- Aerobic exercise can improve VO_{2max} at nearly any age.

OTHER BODY SYSTEMS

Early Adulthood

Strength and Speed

- Strength peaks in the 20s and early 30s.
- Active lifestyles affect functioning.

Reproductive Capacity

- Women's reproductive capacity begins to drop in their mid-20s.
- Men's capacity diminishes, but remains intact.

PHYSICAL FUNCTIONING

Early Adulthood

Immune System Functioning

- Thymus gland and bone marrow produce B cells and T cells.
 - **B cells** produce antibodies to fight off external threats.
 - **T cells** defend against internal threats, such as transplanted organs, cancer cells, and viruses.

ASSISTED REPRODUCTIVE TECHNOLOGY

The age at which couples attempt to conceive and the proportion who are treated for infertility has risen in recent years.

- Assistant reproductive techniques (ART)
- In vitro fertilization (IVF) with nondonor fresh eggs has the highest success rate.
 - Drugs stimulate ovaries to produce eggs.
 - Eggs are retrieved, extracted, and exposed to sperm.
 - Transfer of embryos; injected into uterus or fallopian tubes
- Age-related success rate; higher multiple birth rate (even when single embryo transferred)

You Decide

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

1. The benefits of ART outweigh its risks. If I were faced with fertility problems, I would look into ART.
2. The risks of ART outweigh its benefits. If I were faced with fertility problems, I would prefer to adopt a child rather than to seek help from an ART specialist.

TRUE OR FALSE?

One of the key physical changes over the years of adulthood is increasing susceptibility to disease.

PHYSICAL FUNCTIONING

Early Adulthood

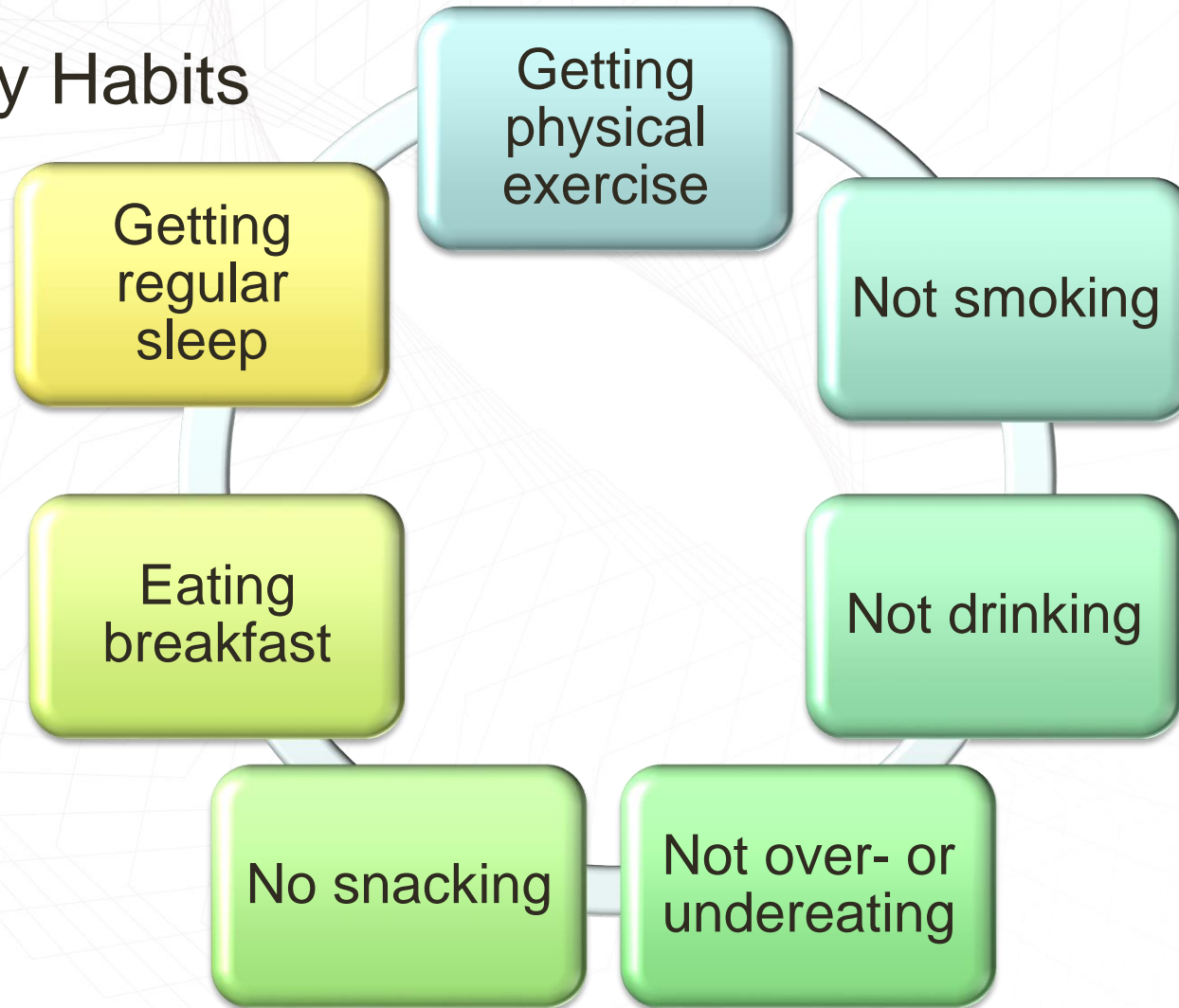
Thymus gland: glandular organ at the base of the neck that produces lymphocytes and aids in producing immunity; atrophies with age

- Central to aging process
- Declines in immune system may be in response to stress or depression.

HEALTH AND WELLNESS

Health Habits and Personal Factors

Healthy Habits



HEALTH AND WELLNESS

Healthy Habits and Risk of Death

Only five habits on the previous slide are independently related to risk of death.

Can you guess which two habits were unrelated to mortality?

HEALTH AND WELLNESS

Health Habits and Personal Factors

Unhealthy Habits

- Poorer health habits lead to higher risk.
- Lack of physical exercise is linked to a higher risk of death.

SMOKING CESSATION

Sixty-nine percent of current smokers want to quit, and half of those who want to quit have actually tried to do so.

Nicotine is a highly addicting drug.

- Withdrawal symptoms subside when the brain adjusts to a lack of nicotine; this takes about two weeks.
- Nicotine-replacement produces increase the likelihood of relapse; psychotherapy and exercise increase success rates.
- Planning to quit during times of reduced stress also contributes to the likelihood of success.

Reflection

1. Why do you think Lana has been unsuccessful so far in her attempts to quit smoking?
2. What advice would you give her to improve her chances of quitting?

HEALTH HABITS AND PERSONAL FACTORS

Social Support

Positive Effects

- Adequate amounts of social support lower the risks of disease, death, and depression.
- Effects found across diverse age groups
- May boost immune system functioning

HEALTH HABITS AND PERSONAL FACTORS

A Sense of Control: Perceived Control

Perceived Control

Self-efficacy: the belief in one's ability to perform some action or to control one's behavior or environment to reach some goal

- Internal locus of control: one attributes the cause of many consequences to oneself rather than external factors.

HEALTH AND WELLNESS

Sexually Transmitted Diseases (STDs)

Bacterial STDs: caused by microorganisms that can be eradicated with antibiotics

- Chlamydia
- Gonorrhea
- Syphilis

HEALTH AND WELLNESS

Sexually Transmitted Diseases (STDs)

Viral STDs: caused by viruses; considered incurable

- Genital herpes
- Genital warts
- HIV/AIDS

AIDS QUIZ

Answer these questions: True or False

1. AIDS is a single disease.
2. AIDS symptoms vary widely from country to country and even from risk group to risk group.
3. Those at greatest risk for getting AIDS are people who have sex without using condoms, drug users who share needles, and infants born to AIDS-infected mothers.
4. AIDS is one of the most highly contagious diseases.
5. One way to avoid contracting AIDS is to use an oil-based lubricant with a condom.

HEALTH AND WELLNESS

Sexually Transmitted Diseases: Prevention

Prevention: behavioral changes

- Less risky sexual behavior
- Use of condoms

HEALTH AND WELLNESS

Intimate Partner Abuse: Prevalence

Physical abuse: physical or other behavior designed to intimidate or harm an intimate partner or former partner

- Prevalence

What is the rate of female physical abuse?

Let's find out.

Rates of Physical Abuse among Women around the World

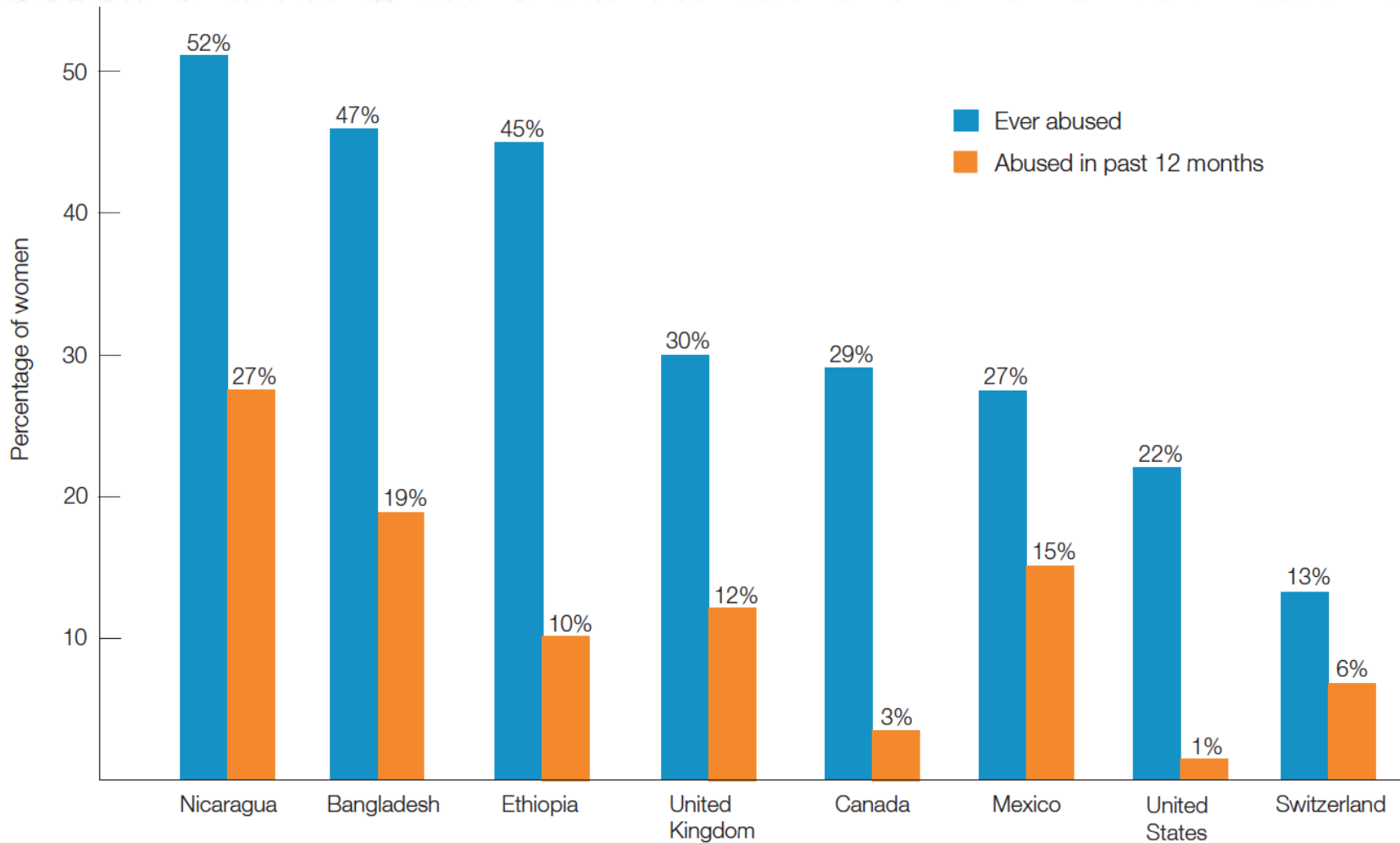


Figure 13.1 Rates of Physical Abuse among Women around the World

HEALTH AND WELLNESS

Intimate Partner Abuse: Causes

Characteristics of Abusers and Victims Associated with Intimate Partner Abuse

- Cultural attitudes
- Gender-role prescriptions
- Personality traits
- Gender differences

HEALTH AND WELLNESS

Intimate Partner Abuse: Victims

Abuse Victims' Characteristics

History or experiences across lifespan

Age

Education

Drug/alcohol use

Interaction patterns with partner

HEALTH AND WELLNESS

Intimate Partner Abuse: Effects

Effects of Abuse

- Women may develop anxiety, depression, shame, and low self-esteem.
- Witnessing abuse influences negative developmental outcomes in children.

HEALTH AND WELLNESS

Intimate Partner Abuse: Prevention

Prevention

- Vigorous law enforcement of abuse
- Temporary shelters
- Training programs for victims stressing problem-solving skills to provide opportunities
- Community-wide and school-based approaches to educate about abuse

STOP AND THINK

Some experts have proposed that date rape may be more traumatic than rapes perpetrated by strangers.

Do you know why?

HEALTH AND WELLNESS

Intimate Partner Abuse: Sexual Violence

Sexual violence: episodes of partner abuse in which an individual uses force to coerce another into engaging in sexual acts

- Context
- Victim gender
- Consequences

HEALTH AND WELLNESS

Mental Health Problems: Causes

Causes of Mental Health Problems

- Age
- Expectations and role conflicts
- Biological causes
- Interaction of biology and environment

HEALTH AND WELLNESS

Anxiety and Mood Disorders

Top Two

Most common mental disorders are those associated with fear and anxiety

Second most common types are problems associated with moods

Disorders

Anxiety

Depression

HEALTH AND WELLNESS

Personality Disorders

Personality disorders: inflexible patterns of behavior that lead to difficulties in social, educational, and occupational functioning

- Behaviors start in mid- or late adolescence, but can remain problematic throughout life.

Personality Disorders

TABLE 13.4 Personality Disorders

Disorder Type	Characteristics
Antisocial	Difficulty forming emotional attachments; lack of empathy; little regard for the rights of others; self-centered; willing to violate the law or social rules to achieve a desired objective
Paranoid	Suspicious of others' behavior and motives; emotionally guarded and highly sensitive to minor violations of personal space or perceived rights
Histrionic	Irrational, attention-seeking behavior; inappropriate emotional responses; sexually seductive behavior and clothing
Narcissistic	Exaggerated sense of self-importance; craves attention and approval; exploits others; lack of empathy
Borderline	Unstable moods, relationships; fear of abandonment; tendency to self-injury; highly dependent on others; impulsive and reckless behavior

(Source: APA, 2013.)

HEALTH AND WELLNESS

Personality Disorders

Schizophrenia: mental disorder that makes it difficult to tell the difference between real and unreal experiences, to think logically, to have normal emotional responses, and to behave normally in social situations

- Characterized by false beliefs (delusions) and false sensory experiences (hallucinations)

HEALTH AND WELLNESS

Substance Use and Abuse Overview

Quick Facts

- Peaks between 18 and 40
- Gender differences
- Binge drinking is common among college students.
- Physical and psychological dependence and physical tolerance may occur.

HEALTH AND WELLNESS

Substance Use and Abuse

Factors Influencing Addictive Potential of Drugs


How quickly the effects are felt



How effectively the drug produces euphoria or reduces pain



How long the pleasurable effects last



How much discomfort is experienced when use is discontinued

SUBSTANCES OFTEN ABUSED

Simulants

- Caffeine
- Nicotine
- Amphetamines
- Cocaine

Depressants

- Alcohol
- Barbiturates
- Tranquillizers
- Narcotics

Hallucinogens

- Marijuana
- LSD
- MDMA

COGNITIVE CHANGES

Post-Formal Thought

Post-formal thought: thinking characterized by an understanding of the relative, nonabsolute nature of knowledge

- Labouvie-Vief, Kohlberg, William Perry

Dialectical thought: the ability to think logically and critically in order to assess and evaluate propositions

- Basseches

COGNITIVE CHANGES

Post-Formal Thought

Reflective judgment model: Stage model characterized by seven distinct but developmentally related sets of assumptions about the process of knowing and the acquisition of knowledge

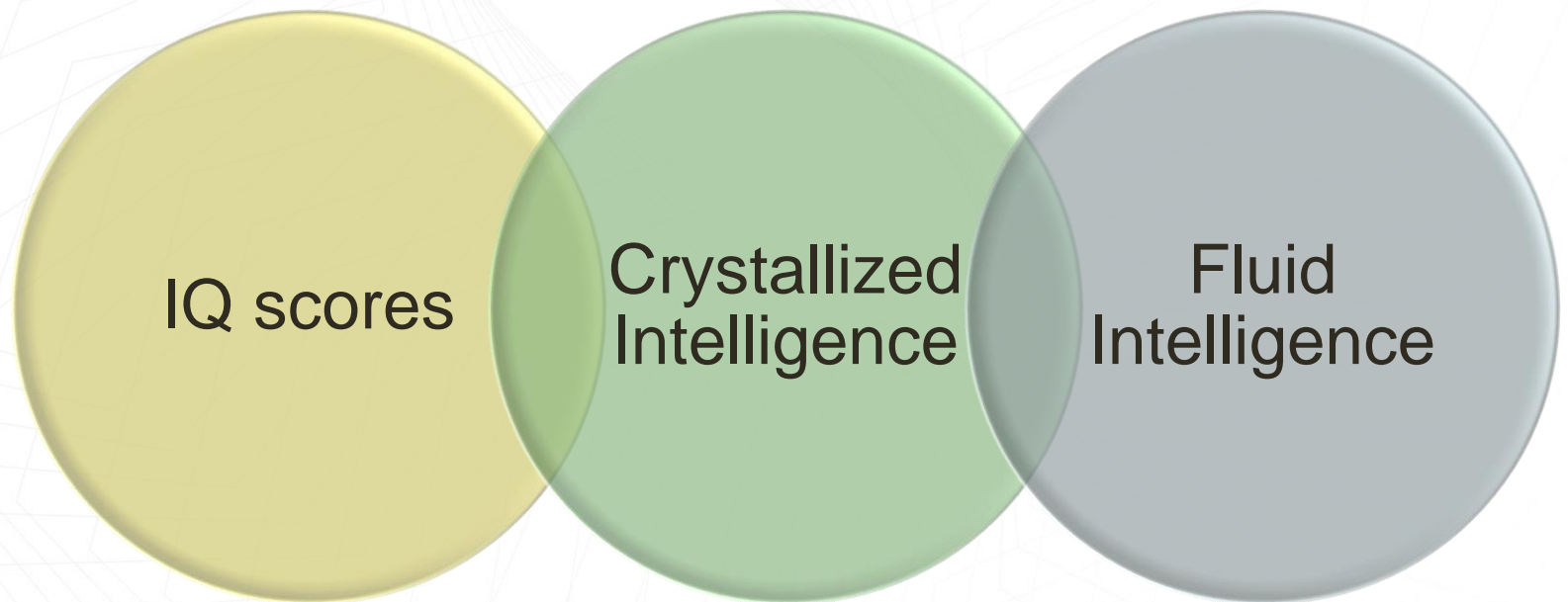
King and Kitchener

- Analyze arguments and underlying assumptions

COGNITIVE CHANGES

Formal Operations and Beyond

Intelligence



CROSS-SECTIONAL AND LONGITUDINAL DATA ON IQ SCORES

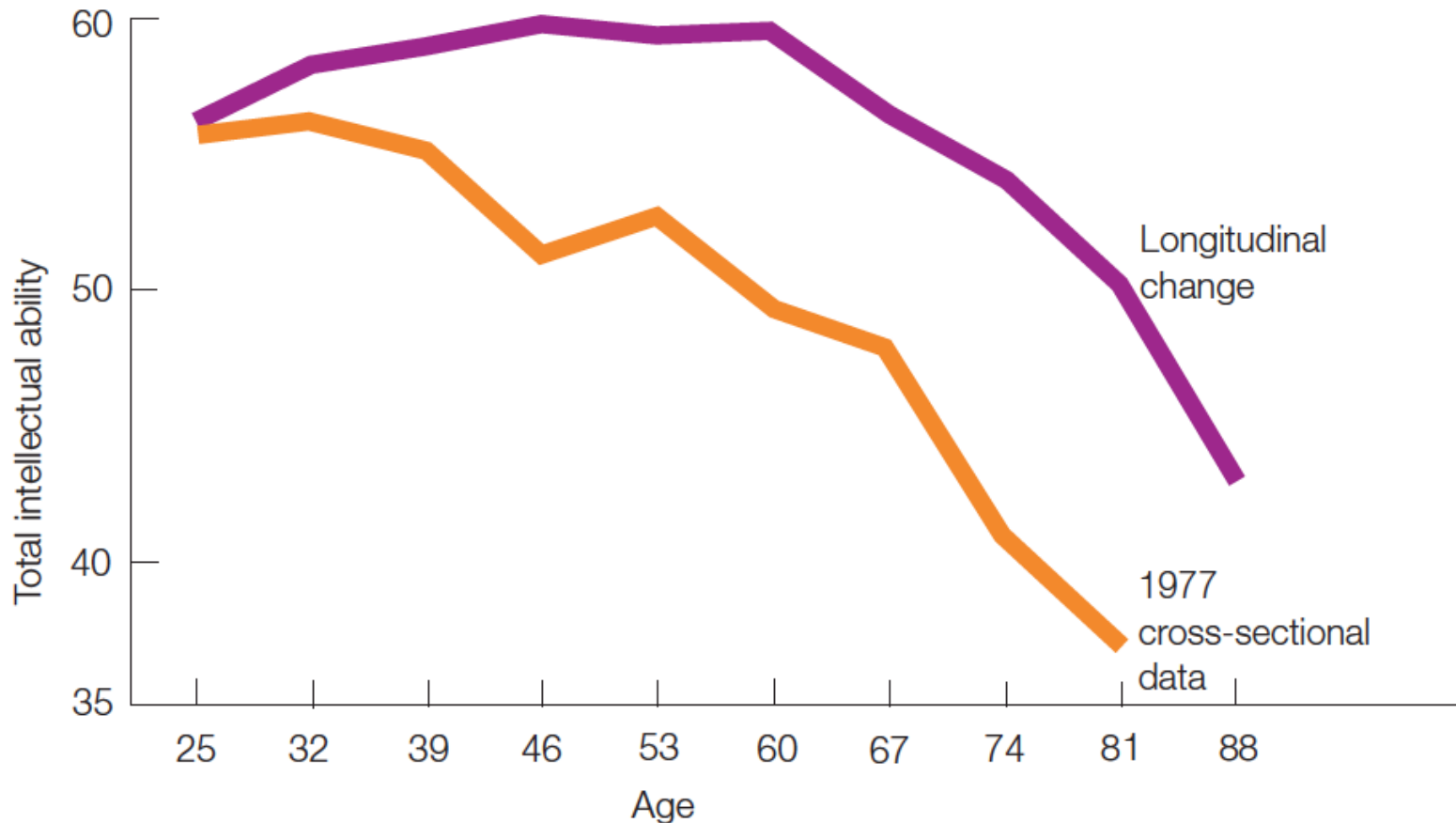


Figure 13.2 Cross-Sectional and Longitudinal Data on IQ Scores

POST-SECONDARY EDUCATION

Impact

Post-secondary education: any kind of formal schooling following high school

- Developmental impact
- Social impact

DEGREE COMPLETION RATES IN THE UNITED STATES

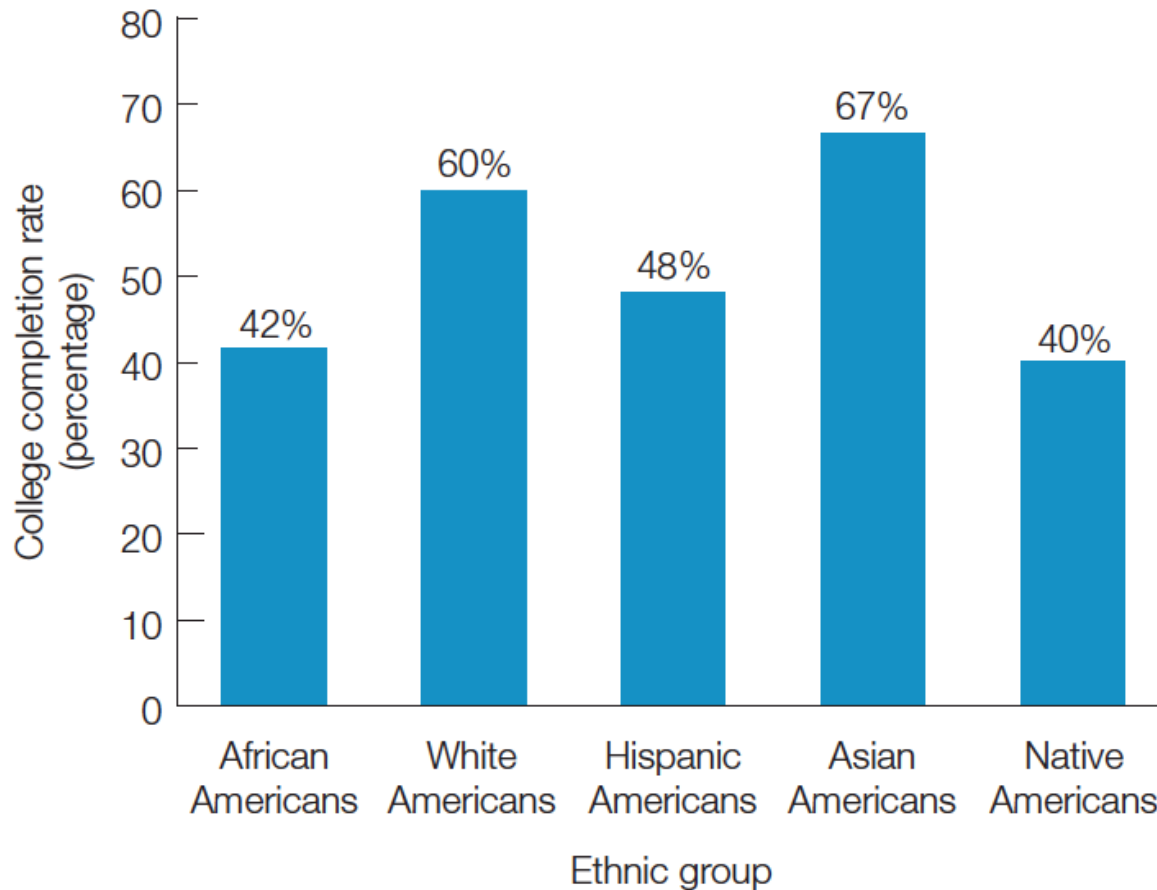


Figure 13.3 Degree Completion Rates in the United States

POST-SECONDARY EDUCATION

Impact

The experience of attending a post-secondary institution varies across males and females.

- Women study twice as much as men; Men party twice as much as women.
- Male behavior may arise from the desire to assert masculine identity.
 - Disengagement from academic pursuits
 - Heightened interest in risky behavior

POST-SECONDARY EDUCATION

Traditional and Nontraditional Students

Traditional

Non-traditional

Let's list the ways in which traditional and non-traditional students are alike—and different.

POST-SECONDARY EDUCATION

Students with Disabilities

Requirement

- Post-secondary education is now required to serve all people with disabilities (IDEA).
 - Incidence
 - Performance and perception

GENDER AND THE COLLEGE EXPERIENCE

Female College Students

- Higher graduation rates
- Study more
- Lower entrance exam scores
- Lower entrance into prestigious programs
- Party less; influenced less by peer pressure

RACE AND THE COLLEGE EXPERIENCE

Graduation rates vary across U.S. ethnic groups.

- White or Asian American
- African American
- Hispanic American students