

Unit 1

Psychology in Healthcare: Fundamental Principles

Why is this unit important?

- It focuses on the vital role of psychology in the health care system.
- It explores:
- Fundamental principles of psychology.
- Basic theoretical framework.
- Clinical implementations.

What will I learn?

1. The vital role of psychology in modern health care services.
2. How human behavior, personality, and other characteristics are shaped by:
 - Biology
 - Environment
3. The several disciplines that have attempted to explain the formation of human behavior.
4. The various ways psychology is applied in the health sector, particularly in:
 - Dental fields
 - Medical fields
5. How physicians can benefit from psychology to provide professional services

Content of the unit

- 1) The vital role of psychology in the healthcare?
- 2) Is human behavior inherited or learned?
- 3) The main theories used to explain human behavior?
- 4) The applications of psychology in the healthcare sector?
- 5) Practical tips

Opening Case Study

1. Huda – Family Physician

- Treats elderly patients regularly.
- An older woman came complaining of poor memory.
- She repeated the same story many times in the session.
- Said she forgets where she places things and what she just said.
- When asked about events from the past (marriage date, first child's birth, first home), she answered quickly and accurately.
- Huda's confusion: How can this woman complain about poor memory while remembering past events so well?

2. Mohamed – Dentist

- Saw a little girl with tooth decay.
- When seated in the dental chair, she became extremely frightened, screamed, and covered her mouth.
- Mohamed tried to reassure her that there was nothing to fear.
- The girl refused to open her mouth, kept screaming, and acted scared.
- Mohamed's confusion: How to deal with such cases appropriately?

3. Sajed – New Pediatric Doctor

- A 3-year-old girl came in.
- She treated her dolls like living beings, played with them for long periods, and interacted with them.
- Sajed thought this behavior was abnormal and possibly a symptom of autism.

4. Kazem – Newly Graduated Dentist

- A patient complained of a toothache so severe it prevented sleeping, working, and relaxing.
- Kazem's uncertainty: How to respond and help relieve this patient's pain?

5. Rosa – Pediatrician

- A mother brought a 2-year-old girl who spoke fluently in complete, correct sentences.
- Later, Rosa saw a boy of the same age who spoke less fluently, in 1–2 word sentences.
- Rosa's conclusion: The girl is much smarter; the boy might have pronunciation, hearing, or language problems.

6. Samer – Internal Medicine Doctor

- Patient complained of stomach pain and inability to eat due to severe pain after eating.
- All lab tests were normal—no physiological disorder found.
- Samer's confusion: Why is the patient experiencing severe pain without a biological cause?

7. Tamara – Emergency Doctor

- Received a heart attack case.
- Admitted to ICU and performed all necessary procedures.
- Patient passed away minutes later.
- Tamara's challenge: How to break the shocking news to the family, who were tense outside the ICU?

8. Suad – Dentist

- Needed to gather information from a patient about dental health habits and family medical conditions related to teeth.
- Suad's question: What interpersonal skills should she master to get the most accurate information quickly and efficiently?

9. Salma – Hospital Doctor

- After months of work:
- Long hours, constant patient contact.
- Many successful diagnoses, but also failures.
- Began feeling distressed, tense, and complaining about the hospital.
- Felt detached from patients, treated them without emotion.
- Ignored the feelings at first, thinking they were temporary.
- Condition worsened—went to a psychologist for advice.
- Question: What did the psychologist tell her and suggest to overcome these symptoms

The Vital Role of Psychology in Healthcare – Study Notes

Core idea:

Psychology is now a key part of healthcare. It helps doctors understand both the mind and body, making treatment more complete and patient-focused.

Old vs. New Approach:

- **Old: Biomedical model** → focused only on physical symptoms.
- **New: Bio-psycho-social model** → health is shaped by:
 1. Biological: genetics, body functions.
 2. Psychological: thoughts, emotions, behaviours.
 3. Social: relationships, environment.

Where Psychology Helps in Healthcare

Psychology has a significant role in understanding how :

1. **Perception, Language & Memory**
 - These affect how patients understand symptoms and interact with doctors.
 - Example: A patient's interpretation of symptoms affects when and how they seek help.
2. **Human Development**
 - Knowing how people think and behave at different life stages guides treatment.
 - Example: Dentists can use child development knowledge to make kids cooperate in therapy.
3. **Psychosomatic Illnesses**
 - Psychology explains how the mind and body interact in diseases like chronic gut or heart problems.
4. **Pain Management**
 - Pain = physical + emotional.
 - Strategies like cognitive distraction and guided imagery reduce pain (Gatchel, 2020).
5. **Interpersonal Skills for Healthcare Providers**
 - Communication builds trust and improves results.
 - Example: Active listening helps physicians understand patient concerns fully and empathy training reduces patient anxiety.
6. **Preventing Clinician Burnout**
 - Resilience training + self-care programs reduce stress and burnout symptoms in healthcare workers

For example, chronic stress (psychological) can worsen diabetes (biological) by affecting blood sugar levels, while poor social support may hinder recovery from surgery. This holistic framework enables doctors to develop more effective treatment plans (Engel, 1977)

Psychology in Medicine

1. Importance of Psychology in Healthcare

- Psychology is now deeply integrated into medicine, dentistry, and healthcare in general.
- This integration marks a paradigm shift toward holistic healthcare, which means:
- Addressing both mind and body.
- Improving patient outcomes.
- Strengthening therapeutic relationships between doctor and patient.
- Creating sustainable work environments for healthcare workers.
- As healthcare evolves, psychological principles remain essential for providing care that is:
- Compassionate.
- Effective.
- Comprehensive.

2. Definition of Psychology

- Origin of the word:
- Psyche (Ancient Greek) → mind or soul.
- -logy → science or knowledge.
- Theoretical meaning:
- Psychology is the science that studies the mind and behavior.
- It investigates why people behave the way they do. (Coon & Mitterer, 2019)

3. What is Behavior in Psychology?

- Definition: Any action or response that can be directly observed or mentally experienced.

A. Observable Behaviors (actions you can see)

Examples:

- Eating
- Laughing
- Sleeping
- Talking
- Watching TV
- Reading
- Learning
- Other visible actions

B. Internal Behaviors (mental processes)

Examples:

- Thoughts and beliefs
- Dreams
- Thinking
- Remembering
- Interpretation
- Perception

C. Emotional Behaviors (feelings and emotional reactions)

Examples:

- Love
- Fear
- Anger
- Hate

4. Example of Behavior Variations

If a woman is unhappy with a coworker's behavior, she might:

1. Hide her feelings or not express them.
2. Form a belief that the coworker is nasty and stop interacting with her.
3. React aggressively, either verbally or non-verbally.

5. Why Psychologists Study Behavior

- To understand all possible forms of behavior (observable, mental, emotional).
- To investigate them scientifically

Key learning point

Psychology, in terms of concept, is an ancient science, but in terms of interests and the method of studying behavior, it is a modern science that is no more than 120 years old!!

Main Fields in Psychology

(Coon & Mitterer, 2019; Al-Zoubi and others, 2014)

Psychology is a very wide science with many fields. Some of the main fields are

1. Brain Science and Cognitive Psychology

- Studies how the human mind thinks, remembers, and learns.
- Applies psychological science to understand:
- How we make decisions.
- How we perceive the world around us.

2. Climate and Environmental Psychology

- Uses psychological science to improve the interactions of people with the world around them.

3. Clinical Psychology

- Integrates the science of psychology with the treatment of complex human problems.

4. Counseling Psychology

- Focuses on facilitating personal and interpersonal functioning across the lifespan.

5. Developmental Psychology

- Studies how people grow and adapt over the course of their lives.
- Applies research to help people:
- Overcome developmental challenges.
- Reach their full potential

Psychology of Personality

This area studies how biological, social, and psychological factors shape personality.

It also looks at the elements that influence personality and different theories about it.

Another focus is on the variety of personalities and their key traits.

Forensic and Public Service Psychology

Forensic and public service psychologists use psychological science to help the judicial system and other public safety organizations.

Their expertise is important in areas that connect psychology and law, such as:

- Determining mental competence
- Evaluating youth testimony

Health Psychology

Health psychologists apply psychology to:

- Promote health
- Prevent illness
- Improve health care

They focus on the emotions behind people's choices to help them make healthier decisions.

Experimental Psychology

Experimental psychologists use scientific methods to study the processes behind human and animal behavior.

Work Psychology

Work psychologists study human behavior in organizations and the workplace using scientific approaches.

Psychology of Teaching and Learning

Educational psychologists study how people learn and retain knowledge.

They apply psychology to:

- Improve the learning process
- Support educational success for all students

Social Psychology

Social psychologists explore how we see ourselves in relation to others and the world, and how this self-perception affects our:

- Choices
- Behaviors
- Beliefs

Sport and Performance Psychology

Sport and performance psychologists use science to study behavior and abilities in:

- Sports
- Exercise
- Performance

They help people overcome psychological barriers that can limit achievement and professional success

There are many domains in psychology that may reach more than 52 specialties according to the American Psychological Association (APA). New research fields in psychology includes: Nero clinical psychology, space psychology & Artificial intelligence psychology.

Because humans are diverse, psychology applies to many areas of life.

- Visible diversity: age, ethnicity, gender, intelligence, physical abilities/qualities, race
- Invisible diversity: educational background, work experience
- Personal diversity: religion, geographical location

Understanding How Genes Influence Behavior

1. Basic Idea:

- The idea that our behavior is influenced by our genes is common in evolutionary psychology.
- But is there solid, clear proof? Does biology determine our results?

2. Twin Studies:

- Twin studies are the most commonly used research to explore this question.
- A key natural experiment is studying identical twins raised apart—they have the exact same genes but grow up in different environments.
- If these twins are similar, their resemblance can be linked to their genes (genotype).

3. Findings on Personality and IQ:

- Some behavior geneticists concluded that genetics heavily influence personality.
- Genetics explain almost half of the variations in personality test scores.
- Genetics explain even more of the variations in IQ scores (Coon & Mitterer, 2019).

4. Exceptions and Variations:

- Despite this, identical twins separated at birth can show big differences.
- For example, if one twin has schizophrenia, the other has only a 50/50 chance of having it too.
- This is important because schizophrenia is thought to have a biological basis (Hetherington; Miller, Neville, 2013).

5. Complexity of Genetic Influence:

- Many traits are influenced by several genes.
- Identical twins share all the same genes, so if six genes affect a trait, they share those six genes.
- However, in the wider population, each gene might not have a clear effect on the trait (Clark & Grunstein, 2004).
- Early research showed clear genetic influence on personality and behavior, but later research shows it's more complicated.

6. Limitations of Twin Studies:

- Identical twins are exceptions, so their results may not always apply to everyday life.
- It is difficult to separate the effects of genetics from the environment.
- Even children raised in the same family experience very different environments.

7. Environmental Influence:

- Children have different temperaments and are treated differently by family members.
- They pursue different hobbies and friendships.
- For example, a curious child develops many hobbies and learns more, while less curious siblings may get less intellectual stimulation.
- Differences in experiences from the environment influence personality and IQ about as much as genes do (Spuhler, 2017).

8. Summary:

- Genes definitely influence behavior in general ways.
- Some people are born naturally extroverted, joyful, emotionally reactive, friendly, creative, or clever.
- However, we do not fully understand the biochemical processes behind this.
- There is an important difference between:
 - Personality predispositions (which can be inherited)
 - Actual behavior (which is never entirely inherited).

Understanding the Influence of Genes and Environment on Personality and Behavior

- It is difficult to conclude that personality and behavior are fully shaped by either genes or the environment alone.
 - Many possibilities exist in this debate.
 - The simplest answer often given is:
 - Personality and human behavior are influenced 50% by genes
 - And 50% by the environment

Theories Explaining Human Behavior

There are four main theories that explain the causes and sources of personality and human behavior:

Theory	Key Idea
Psychoanalytic	Personality and behavior are influenced by the subconscious and early childhood experiences.
Behavioral	Personality and behavior are shaped by parental nurturing styles and reinforcement.
Cognitive	Personality and behavior depend on thinking style and perception.
Humanistic	Personality and behavior are influenced by an individual's will and choices.

Freud transformed how we think about and handle mental health issues. Freud developed psychoanalysis as a method of listening to patients and understanding how their minds operate. Psychoanalysis continues to have a significant impact on current psychology and psychiatry. Sigmund Freud's theories and work influenced contemporary views of dreams, childhood, personality, memory, sexuality, and therapy. Freud's work also established the groundwork for many other theorists to develop ideas, while others created new theories in contrast to his (Hetherington; Miller, Neville, 2013).

1. Psychoanalytic Theory

- Founded by Sigmund Freud (1856–1943), an Austrian neurologist who transformed mental health understanding.(how we think and handle metal issues)
- Key idea: Personality and behavior are influenced by the unconscious mind and early childhood experiences.
- Freud introduced psychoanalysis, a method for understanding how their mind operate and treating mental health through talk therapy (listening)

Main Concepts of Freud's Theory:

Unconscious mind: Stores thoughts, memories, and emotions beyond conscious awareness.

Personality structure: Composed of three parts:

- Id: Unconscious desires.
- Ego: Conscious self.
- Superego: Moral and ethical framework governs how ego function



The conflicts and interactions between these components shape one's personality

Life and death instincts:

- Life instincts (Eros): These focus on survival, pleasure, and sexual reproduction.
- Death instincts (Thanatos): These involve aggression, violence, self-destructive behaviors, and a drive toward death or destruction.

Psychosexual Development:

- Freud believed personality and sexual identity develop through five stages:
 1. Oral stage
 2. Anal stage
 3. Phallic stage
 4. Latent stage
 5. Genital stage

Defense Mechanisms:

- To handle anxiety and inner conflicts (especially between the Id and Superego), people use unconscious mental strategies called defense mechanisms.

Common defense mechanisms include:

- **Projection:** Saying others have your feelings.
Example: You feel angry but say, "They are angry with me."
- **Displacement:** Taking out feelings on a safer target.
Example: You're upset at your boss but yell at your sibling instead.
- **Repression:** Forgetting bad memories unconsciously.
Example: You don't remember a traumatic event from childhood.
- **Sublimation:** Turning bad feelings into positive actions.
Example: You're angry, so you go for a run or paint to release it.
- **Regression:** Acting like a child when stressed.
Example: You start throwing a tantrum when things get tough.

Childhood Influence

1. Childhood events affect adult personality and behavior.
2. Traumatic childhood experiences can cause unhealthy personality traits and mental health issues later.
3. Childhood is not the only factor influencing adult mental health.
4. Freud established the basis for a person's history to be considered during treatment and diagnosis

Freud's theories had such a profound influence on psychology that a new school of thought sprang from them: psychoanalysis. Psychoanalysis has had a long-term influence on both the study of personality and psychotherapy

Psychoanalysis sought to bring unconscious information into conscious awareness in order to induce catharsis. Catharsis is an emotional release that may bring about relief from psychological distress.

1. Freud's biggest contribution to psychology was creating talk therapy to treat mental health problems.
2. Talk therapy became the foundation of psychoanalysis and is still used in many treatments today to help people with psychological and behavioral issues.
3. Freud said a mentally healthy person can "love and work", meaning they can have good relationships and be productive.
4. A disturbed person struggles to love and work properly.
5. According to Freud, the only way to help someone is by uncovering hidden (unconscious) thoughts and repressed feelings.
6. Most of these hidden problems come from early childhood experiences, especially traumatic or shocking events that are hard to change they are largely unconscious and only appear at times when the self-censor is absent from consciousness, which is through dreams in a state of sleep or through slips of the tongue in a state of consciousness, in which the person expresses what he really feels without falsification .

- Freud's theory has faced much criticism from scientists and researchers.
- Critics say his ideas are more philosophical than scientific and cannot be proven.
- The theory focuses mainly on sex and is centered on the male mind, ignoring the female perspective.
- Despite the criticism, psychoanalysis is still supported by some and has not been completely rejected.
- Many of Freud's terms, like self-defense, projection, and ego, are widely used even by non-experts.

Second: Behavioral Theory

Basic idea:

- Personality and behavior are shaped by how parents nurture and reinforce actions.
- Focus is only on visible behavior, not thoughts or feelings.
- Personality is a collection of repeated, observable behaviors.(These are the actions he has become used to and has integrated into his or her personality.)

Key point: No need to guess about what happens inside (thoughts, subconscious, emotions) since only observable actions matter.

3. Skinner's contribution:(main theorist in this field)

- Skinner (1904–1990) said behavior is controlled by the environment where a person grows up.
- Behaviors and personality come from how we are raised and reinforced by parents and others.
- Caregivers either reinforce or suppress behaviors.
- Concepts like reinforcement, punishment, that work to shape human behavior through the environmental framework in which he lives emerged in this school

4. Personality definition (Skinner's view):

- Personality = behaviors reinforced by the environment.
- Example: If a child is rewarded for politeness, they develop a polite personality.
- If bad behavior is rewarded, it becomes a permanent trait affecting others.

Bandura and Social Learning Theory:

- Bandura made a major advancement by developing social learning theory.(One of the most significant advancements in this theory)

- He explained that people's actions are guided, not automatic.

Humans learn from:

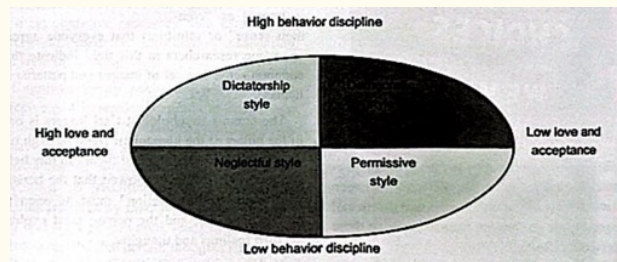
- Rewards and punishments
- Watching others and their experiences
- People often copy behaviors they see in others (models).
- Someone might keep doing a behavior hoping for a reward, even if it hasn't happened yet—like someone who keeps buying lottery tickets despite never winning.
- Bandura also said a behavior can continue if a person expects a future benefit, even if the reward isn't immediate.

Key learning point

Behaviorism focuses on the apparent behaviors that humans perform and the role of reinforcement and punishment in repeating behavior

How Parenting Affects Children's Personality:

1. Parenting style influences children's personality formation.
2. Parenting styles depend on two main factors:
 - Amount of love and acceptance shown by parents to their children
 - Amount of control and discipline parents apply to their children's behavior
3. The combination of these two factors creates four different parenting styles, as shown in the figure



Parenting Styles and Their Effects

1. **Democratic Style**
 - Parents show lots of love and set clear rules for good behavior.
 - Kids usually have good social skills, do well in school, and are polite.
2. **Dictatorship Style**
 - Parents set strict rules but show little or no love.
 - Kids often feel scared, unsure about decisions, and have average school performance.
3. **Permissive Style**
 - Parents show love but do not set rules or teach right from wrong.
 - Kids tend to be dependent, spoiled, impulsive, moody, and have poor social skills.
4. **Neglectful Style**
 - Parents show little love and do not set rules.
 - Kids often act negatively, perform poorly in school, can be aggressive, and may develop problematic behavior

Third: Humanistic Theory (phenomenological theory)

- Focus: How people interact with their situations and surroundings.
- Main idea: Behavior and personality are mainly shaped by the choices and will a person makes in life.
- You cannot blame your surroundings or circumstances; instead, it is about your own decisions that create your comfort zone.
- Philosophical background:
- Rooted in philosophy and psychology.
- Phenomenologists study how we experience things and how our mind processes these experiences
- focus on the interaction between the initial state of our experiences and the mental processes that go through them to perceive these experiences
- Example:
- Music is a group of melodies that become meaningful based on how we interpret them.
- Similarly, life events are shaped by how we interpret and understand them

Humanistic Theory

Interpretations of experiences:

- Some interpretations are unique to the individual and only they understand them.
- Other interpretations are shared by many people and are called "common sense" or intuitions—things most people agree on.
- Some researchers say common sense is made of shared images and patterns

The famous psychologist Carl Rogers is one of the pillars of the humanistic trend through his development of an integrated theory in this field (Rogers, 1970).

- **Carl Rogers' contribution:**

- Rogers is a key figure in humanistic psychology.

He said that to reach self-realization, a person must:

- Be open to new experiences
- Explore their own feelings and thoughts.

Challenges in self-awareness:

- Many people avoid exploring their own experiences.
- They may suppress or ignore thoughts and feelings that conflict with their self-image.

Influence of parents and society:

- Rogers said many people only know themselves based on what their parents taught them.
- This can cause people to underestimate their own skills and abilities because they think these are unimportant or wrong, based on what they learned growing up.
 - This belief is not true because people have free will and the ability to change.

Free will and choice:

- People are free to choose and are not controlled by society or others.
- Even if society says something is "common sense," it doesn't mean it's always true.

Difference between behavior and self:

- Rogers emphasized that behavior and the person's self are different.
- Parents should criticize behavior, not the person.
- For example, say: "This behavior is not good," instead of "You are not a good person."
- Criticizing the self harms the person's identity; criticizing behavior helps improve actions without damaging self-esteem.

Key learning point

- Choice -The option of selecting from the alternatives.

- Decision -Making up one's mind to act on any choice, need or problem.

Consequences: The choices we make and the decisions we take gets us the results

Fourth: Cognitive Theory

Main idea:

Personality and behavior are mainly influenced by cognitive processes such as:

- Attention
- Perception
- Memory
- Information processing
- Thinking style

How people think affects feelings and behavior:

- People perceive and interpret situations in their own ways.(characteristic)
- These perceptions shape their feelings and behavior.
- People have automatic (spontaneous) thoughts about past, present, or future events without thinking much.

Thoughts and beliefs can cause:(Cognitive theories are characterized by their focus on the idea that how and what people think leads to the arousal of emotions and that certain thoughts and beliefs lead to

- Disturbed emotions and behavior (if negative)
- Healthy emotions and behavior (if positive)
- Key point: thinking style shapes personality
- Two main types of thinkers:

1. Positive thinkers

- Focus on opportunities, not obstacles
- See failure as temporary setbacks, not permanent problems

2. Negative thinkers

- Tend to be pessimistic
- Doubt themselves and their abilities
- Focus on problems, not solutions
- Hold themselves back from growth and success

Cognitive Scientists on Memory and Thinking

- Key idea:

Previous experiences and how they are stored and recalled in memory play an important role in shaping behavior

- Memory is influenced by thinking style:
- If a person thinks positively, they tend to recall positive information from memory.
- If a person thinks negatively, they tend to recall negative information from memory.

- Example:
- When someone smiles at a person:
- Positive thinkers interpret the smile as a compliment.
- They recall past experiences that support this positive view.
- Negative thinkers interpret the smile with suspicion.
- They recall past experiences where they faced ridicule or criticism

Key learning point

The combination of cognitive and behavioral ideas resulted in Cognitive Behavioral Therapy (CBT), which is one of the most well-known techniques in psychological therapeutic methods.

What are the applications of psychology in the healthcare sector?

There are several applications; however, for the purposes of this book, we will divide them into two categories and define the key applicable elements, as illustrated in the figure.

Applications in the medical field

- for patients
- for medical professionals
- for hospitals

Applications in the dentistry field

- for dentistry patients
- for dentistry professionals
- for dentistry clinics

For Patients

- Psychology provides greater knowledge of human sickness:
- Health, illness, and healthcare are influenced by biological, psychological, and social factors according to the bio-psycho-social model of health.
- Many healthcare systems now use this model to improve care.
- Medical experts recognize the importance of considering psychosocial factors when treating patients.

Psychology contributes to comprehensive healthcare services:

- Psychologists collaborate with physicians, nurses, social workers, and other healthcare professionals.
- This teamwork offers integrated care addressing both physical and mental health problems.
- Such cooperation ensures patients receive complete care and helps improve their overall well-being.

Psychology can enhance diagnosing:

- With new technology and the internet, patients can find many resources to diagnose themselves.
- It is common for patients to come to hospitals and clinics already having a diagnosis and a preferred treatment in mind.
- However, this may prevent them from getting the correct diagnosis and treatment.
- Doctors often face this problem and try to manage it in their own ways.
- Besides self-diagnosing, other psychosocial factors need attention to provide full healthcare. These include:

- How well patients follow their treatment (treatment adherence)
- Their lifestyles
- Their motivation
- Psychological issues like anxiety, stress, and depression
- Therefore, doctors need psychosocial training. This helps them support shared decision-making with patients.
- This way, doctors and patients can choose treatment and management plans that match the patient's lifestyle and motivations

Psychology can enhance services provided for patients:

- Training doctors in important soft skills helps improve care. These skills include:
- Empathy
- Active listening
- Critical thinking
- Decision-making
- Problem-solving
- These skills help doctors:
- Customize treatments to fit their patient's needs
- Improve communication with patients

Supporting caregivers:

- Caregivers of chronically ill patients often face:
- Stress
- Burnout
- Other psychological challenges
- If these issues are ignored, they can affect other parts of caregivers' lives.
- Doctors can:
- Regularly monitor caregivers
- Refer them to mental health professionals if needed
- This reduces serious caregiver burnout and improves:
- The quality of treatment
- The quality of life for both caregivers and patients

Psychology provides valuable information to improve medical professionals' skills, including:

- Responding properly to biases caused by sociodemographic or individual differences such as:
- Gender
- Race
- Nationality
- Handling difficult patients and conflicts with patients or their caregivers
- Managing complicated ethical dilemmas
- Improving questioning and interviewing skills
- Breaking bad news to patients or families
- Dealing with medical errors
- Handling difficult colleagues

Managing stress, burnout, and promoting self-care environment:

- Doctors are more prone to mental health issues like:
- Stress
- Anxiety
- Low self-esteem
- Depression
- Drug and alcohol abuse
- Post-traumatic stress disorder (PTSD)
- Psychologists have developed various self-care programs to:
- Reduce stress
- Improve doctors' mental health

Key learning point

Training in psychology can assist doctors deal with ethical distress and moral harm. Ethical distress is a feeling of discomfort caused by being unable to act ethically, which is generally due to institutional or resource limits. Moral harm, on the other hand, is caused by prolonged moral discomfort and can result in interruption of functioning as well as long-term psychological impairment

For hospitals

- Psychologists help manage healthcare facilities like hospitals and clinics.
- Many doctors are involved in managing these places.
- Work psychology gives useful advice on:
- Recruiting the right staff
- Evaluating employee performance
- Training and developing staff skills
- Improving job satisfaction
- Motivating employees
- Enhancing leadership skills

Architectural Design of Medical Facilities

- The design of medical buildings affects patients and healthcare workers physically, emotionally, and psychologically.
- Recently, the impact of architecture on healthcare quality has gained more attention.
- Important features of medical environments that support mental health include:
- Lighting
- Colors
- Spaces for privacy (seclusion)
- Areas for social interaction

Why is this important for doctors?

- Doctors work very long hours (about 120 hours per week), so maintaining mental health and brain function is critical

- **Good design can:**
 - Increase doctors' productivity
 - Improve accuracy in treating diseases

Challenges with current designs:

- Doctor's stations often have:
- Open spaces with little privacy
- Poor airflow
- These issues can lead to:
- Lower quality of treatment
- Less patient safety
- Patient dissatisfaction
- Higher rates of doctors quitting their jobs

Second: Applications in the Dentistry Field

For Dentistry Patients

Psychology's Role in Dentistry

- Psychology affects the overall dental experience for patients.
- Dental treatments can cause stress, fear, and anxiety in some patients.

Importance of Understanding Behavior

- Knowing about human behavior, emotions, and motives helps dentists provide better care.
- Dentists trained in psychology can:
- Communicate better with patients
- Offer emotional support
- Help patients overcome fear and anxiety during dental visits

How Psychology Helps Dentists and Their Patients

Understanding Patients' Needs

- Psychology helps dentists understand their patients' unique worries and concerns about dental treatments.
- By knowing the emotional and psychological causes of dental fear, dentists can make patients feel more comfortable and relaxed during procedures.

Resolving Psychological Causes of Dental Problems

- Some dental issues, like dental fear, may come from past traumatic experiences.
- Dentists who understand these psychological factors can help patients overcome their fears and avoid

future dental problems.

- Stress-Related Dental Issues
- Teeth grinding and clenching (bruxism) can be signs of stress.
- Managing stress through exercise, relaxation, and meditation is important to reduce bruxism and protect teeth.

Overall Benefit

- Psychology supports dentists in giving better care and improving patients' overall dental experiences.

For Dentistry Professionals

- Psychology provides useful information to help dentists improve their skills and professionalism

For Dentistry Professionals

1. Building Good Relationships and Reducing Cancellations

- Training in psychology helps dentists build strong relationships with patients.
- This reduces appointment cancellations by gaining the right kind of commitment from patients.
- A low cancellation rate starts with securing proper commitment at the beginning.

2. Encouraging an Active Mindset in Patients

- Help patients develop a proactive approach toward their dental health.
- Proactive patients prefer preventive care over waiting for problems that require extensive treatment later.
- Psychology is a strong tool to guide patients toward preventive habits.

3. Improving Interpersonal Skills

- Psychological training can enhance communication and interaction with patients.
- Small changes—like rephrasing a question—can help patients better understand treatment options.
- This also increases their willingness to commit to treatment plans for better oral health outcomes

4. Reducing Stress and Preventing Burnout

- Clinical psychology offers tips to lower stress and avoid burnout.
- Burnout reduces productivity and negatively affects both personal and professional life.

For Dentistry Clinics

1. Designing Effective Dental Clinics

- Psychology helps in choosing clinic designs that match patients' needs and emotions.
- Colors and furniture should promote comfort:
- Blues and greens are common in healthcare settings because they create a calm and trusting atmosphere.

2. Creating a Child-Friendly Environment

- Develop tools, spaces, and furniture suited for children:
- Playful and engaging waiting rooms.
- Kid-friendly treatment rooms.
- Ceiling decorations to distract and comfort children.
- Dental equipment designed for children.
- Kid-sized furniture for comfort and safety.

Psychology on the Ground – 10 Top Tips for a Child-Friendly Dental Clinic

1. Design the clinic to be more friendly

- First impressions shape how a child feels and behaves.
- Avoid cold, sterile designs (white, steel).
- Use soft calming colors (blue, pink, green, yellow).
- Reception area should be welcoming, not intimidating.

2. The work starts before the child even arrives

- Receptionist should gather details from parents (past experiences, pain, anxiety).
- Helps staff prepare the best approach for the child.

3. Take the time to really get to know your new little patient

- Use the first appointment to build trust and comfort.

4. It's about the child, not the parent

- Keep focus on the child during the visit.
- Use open, child-friendly questions.
- Get five "yes" answers in a row to increase cooperation. (Psychology state that if the child answers five questions in a row with 'yes', (s) he will not say 'no' when you ask them if they want to do the check up to their teeth or throat)
- Offer small choices (e.g., cartoon selection) to give control.

5. Give them choice

As any parent can testify to, giving children directives does not always work, especially when they are in an unfamiliar environment. For example give them choice over what cartoon they wish to watch or listen while they are lying on the treatment bench

6. Positive reinforcement

- Wrap all communication and actions in encouragement and praise.

7. Tell the truth!

- Be honest but reassuring.
- Example: "special children's injection with magic gel" instead of just "injection."

8. Be prepared

- Children's attention span $\approx$ 20 minutes.
- Keep treatment short but complete in one visit if possible.
- Have all tools ready, inform parents beforehand to avoid interruptions.

9. You have one opportunity; so make it count

- Provide long-lasting treatment to avoid repeated visits for the same problem.

10. Improve prevention education

- Teach healthy habits in simple language.
- Children often listen more to professionals than parents



نفس النقاط المكتوبين فوق بس مع تفاصيل ما الهم داعي اختصرتهم للتسهيل وحطيت الصورة في حال حبيتوا تقرأوها (ما الهم ادني داعي)

Do	Avoid
• Show patients compassion and understanding. • Show your patients that you care about them by giving them extra attention. • Develop your social skills because they are essential for a successful career in healthcare. • Give patients honest, genuine advice, and be prepared for them to disregard it. • Have conversations with patients, follow up with them, and establish trust	• Avoid treating people like objects as this can hinder the success of any medical experts. • As a dentistry professional treat patients "as people not a teeth" • Don't get burned out. Take breaks and regular vacations. • do not force patients to take your options and give them the right to choose! • do not lose trust with your patient and remember the ancient saying that 'trust arrives on foot but leaves on a horse'

Quick review

- Psychology word comes from the ancient Greek root (Psyche), which means mind or soul, and (logy) which means science or knowledge. Theoretically, the term psychology refers to the science that studies the mind and behavior and why people behave the way they do.
- There are two benefits that we can get from studying psychology, increasing self-awareness and increasing awareness of others.
- There are many domains in psychology that may reach more than 52 specialties according to the American Psychological Association (APA). Some of the most common are: clinical psychology, health psychology, personality psychology, work psychology and social psychology.
- Human behavior may get affected by biology and environment. there is little doubt that genes influence our behavior in pretty general ways. Some people are born with a natural tendency to be extroverted, joyful, emotionally reactive, friendly, creative, or clever. Yet, we do not have a good understanding of any of the relevant biochemical mechanisms.

- In general, there are four different theoretical approaches that have tried to explain the causes and sources of personality and human behavior > these theories as follows:
- Psychoanalytic perspective: Personality and human behavior are influenced by sub consciousness and early childhood experiences.
- Behavioral perspective: Personality and human behavior are influenced by parental nurturing styles and reinforcements.
- Cognitive perspective: Personality and human behavior are influenced by style of thinking and way of perception.
- Humanistic perspective: Personality and human behavior are influenced by individual's will and choices.

There are many applications of psychology in the healthcare sector, sof them as follows:

- Applications in the medical field
 - o for patients
 - o for medical professionals
 - o for hospitals
- Applications in the dentistry field
 - o for dentistry patients
 - o for dentistry professionals
 - o for dentistry clinics

UNIT 2 The Psychology of Attention, Perception, Memory, and Language

Opening Case Study

Case 1: Visual Perception and Stroke

Mrs. Fatima is 65 years old. After having a stroke, she has trouble recognizing faces, even those of her family members. Although her eyes and basic vision are fine, she cannot identify familiar people. Her doctor says she has prosopagnosia (face blindness). This happens because parts of her brain that handle visual perception are damaged.

Why is this important?

It shows that our brain has special areas for different senses. Recognizing faces isn't just about seeing — it needs specific brain parts working well.

Case 2: Memory Loss and Alzheimer's Disease

Mr. Khader is 72 years old and retired. His daughter brings him to the doctor because he forgets recent talks and often loses things around the house. Tests show he has mild cognitive impairment (MCI), which is an early sign of Alzheimer's disease.

Why is this important?

Knowing how memory works and its different stages helps doctors plan treatments to slow down memory loss for people like Mr. Khader

Introduction: Human Cognition

- Cognition means the mental processes that control how we think, learn, and understand through experience and senses.
- For medical and dental students, understanding cognition is important because it helps with:
- Diagnosing patients correctly
- Communicating well
- Planning treatments

This chapter covers 4 main parts of cognition:

1. Attention
2. Perception
3. Memory
4. Language

• These parts work together to shape how we behave and make decisions. The focus is on how these relate to real clinical work.

Attention

- The ability to focus on important things and ignore distractions.
- Important for tasks like surgery or noticing small symptoms.

Perception

- Understanding sensory information to recognize patterns.
- Helps doctors see problems in X-rays or physical exams.

Memory

- The process of learning, storing, and remembering information.
- Important for remembering medical facts, patient history, and emergency steps.

Language

- Language is the main tool for communication.
- It helps healthcare workers talk clearly with patients and each other.
- Language ensures that complicated medical information is shared precisely.

Summary: Importance of Cognitive Processes

- Attention, perception, memory, and language together are the foundation for good clinical work.
- Knowing how these processes work and their limits helps:
 1. Improve diagnosis accuracy
 2. Get better patient results
 3. Build strong doctor-patient relationships

Chapter Goal

- Combines theory with real-life examples.
- Prepares students to use knowledge about cognition in medical and dental practice.

Key learning point

Cognitive processes such as perception, memory, attention, and language are interconnected and play critical roles in everyday functioning. Impairments in these areas can significantly impact quality of life and require tailored interventions.

Attention: Definition and Function

- What is Attention?
- It is the ability to focus on important parts of the environment.(ensuring precision and accuracy.)
- It helps filter out unimportant information.
- This focus is essential to do tasks well and reach goals.
- Why is Attention Important in Medicine?
- Helps doctors and medical staff stay precise and accurate.
- Needed for:
 - Reading diagnostic images
 - Performing surgery
 - Watching patients closely in emergencies
- History of Attention Study
- Attention was not studied separately until recently.
- It was often ignored compared to memory and perception.
- Recent neuroscience and psychology research show attention is very important in how we think and behave.

Attention Types

Attention can be divided into three main types: sustained, selective, and divided. Each has a special role in clinical work:

1. Sustained Attention:

- Keeping focus on a task for a long time.
- Example: reading long medical records or watching small changes in a patient's condition.
- Fatigue and stress reduce sustained attention, causing mistakes in healthcare (Warm et al., 2008).

2. Selective Attention:

- Focusing on important things and ignoring distractions.
- Example: in a noisy hospital, listening only to important alarms or conversations.
- Controlled by brain networks, especially the prefrontal cortex, which stops irrelevant info (Desimone & Duncan, 1995).

3. Divided Attention (Multitasking):(While divided attention is often necessary in fast-paced medical

- Doing several tasks at the same time.
- Example: managing many patients or handling emergencies.
- Can reduce performance if tasks need a lot of thinking.
- Multitasking increases brain load and may cause mistakes, so task priority is important (Pashler, 1994).

Overt vs. Covert Attention

Attention can also be divided based on body movement:

• Overt Attention:

- Involves moving the body, like turning the head or eyes.
- Example: a dentist moves to see a specific area in a patient's mouth.
- It's guided by outside cues and linked to body movement (Corbetta & Shulman, 2002).

• Covert Attention:

- Focusing without moving the body or eyes.
- Example: a doctor looks at a radiograph mentally focusing on details without eye movement.
- Important when moving is not possible or needed, allowing quick focus changes (Posner, 1980).

Top-Down vs. Bottom-Up Processing

- **Bottom-Up Processing (Exogenous Attention):**

- Attention triggered automatically by something outside (external).
- Example: a loud noise or flashing light grabs your attention without trying.
- It is reflexive and doesn't need effort.
- Example in hospital: a sudden alarm immediately gets a doctor's attention (Theeuwes, 1991).

- **Top-Down Processing (Endogenous Attention):**

- Attention guided by your goals, knowledge, and what you expect.
- Example: a doctor looking carefully for a symptom during an exam.
- Needs mental effort and is important for planned, focused tasks (Egeth & Yantis, 1997).

Factors Influencing Attention

- Things that reduce attention:
- Stress and tiredness lower focus and increase errors (Lieberman et al., 2005).
- Neurological problems like ADHD make it hard to keep or change focus.
- Things that improve attention:
- Training like mindfulness(trainingprograms designed to enhance attention,) can improve focus and lower stress in patients (Chiesa et al., 2011).

Key learning point

An important implication of attention is that it focuses cognitive resources on relevant stimuli while filtering distractions and sustaining concentration

This means that attention works like your brain's "spotlight."

- It points your mental energy toward what's important (relevant stimuli).
- It blocks out things that don't matter at the moment (distractions).
- It keeps your focus steady so you can work on a task without getting pulled away (sustaining concentration)

Human Diversity

- **Cultural differences**

- Affect how people perceive and interpret sensory information.
- Example: Some cultures focus on the big picture (holistic perception), while others focus on small details (detail-oriented observation).

- **Language diversity**

- Affects cognitive processing.
- Example: Bilingual individuals often have better executive function than monolingual individuals

Definition and Importance

• Perception = The process of organizing, interpreting, and integrating sensory information to create a clear and meaningful understanding of the world.

- Sensory modalities involved:

- Vision
- Hearing
- Touch
- Taste
- Smell

- Importance in clinical practice:

- Helps in diagnosing conditions.
- Assists in interpreting medical imaging.
- Aids in assessing patient symptoms.

- Examples:

- Visual perception → Identifying abnormalities in radiographs.

- Somatosensory perception → Dentists feeling subtle tissue changes during oral exams.

- Why it matters:

- Helps understand normal sensory function.
- Allows recognition of deficits from neurological or sensory impairments.

- Stages of the perceptual process:

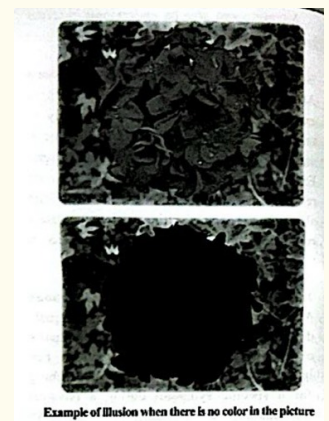
1. Sensation → Sensory receptors detect stimuli.

2. Organization → Brain structures raw sensory data into patterns.

3. Interpretation → Brain gives meaning to the sensory input.

- Perceptual errors:

- Illusions → Brain misinterprets sensory information → distorted reality.
- Clinically important because they can cause misdiagnosis or diagnostic bias.



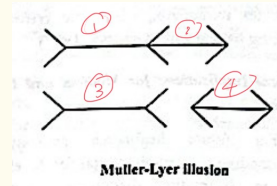
Example of illusion when there is no color in the picture

Types of Perception

Perception can be grouped based on the sensory modality involved, and each type has an important role in clinical practice:

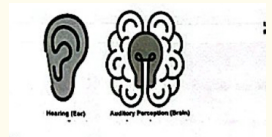
1. Visual Perception

- Definition: The ability to interpret visual stimuli like shapes, colors, movement, and spatial relationships.
- In healthcare:
 - Reading diagnostic images.
 - Identifying skin lesions.
 - Observing subtle facial changes in patients.
- Examples:
 - Radiologists detect fractures or tumors in X-rays.
 - Surgeons navigate complex anatomy during procedures.
- Challenge: Visual illusions (e.g., Müller-Lyer illusion, where two equal lines appear different due to arrow-like ends) show how perception can be misleading.
- Clinical point: Always confirm visual findings with objective measurements or additional diagnostic tools



2. Auditory Perception

- Definition: Auditory perception is the ability to process sounds and speech.
- Importance in healthcare:
 1. Essential for clear communication with patients and colleagues.
 2. In audiology, helps diagnose hearing problems and conditions like tinnitus.
 3. Speech perception is important for understanding patients' symptom descriptions.
- Clinical examples:
 - In noisy environments (e.g., emergency rooms), background noise can cause misinterpretation.
 - Quiet spaces are important to ensure accurate communication.



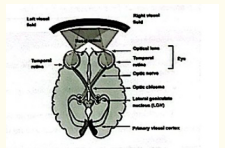
Somatosensory Perception

- Definition: The ability to interpret touch, pain, temperature, and proprioception (body position awareness).
- Importance in healthcare:
 1. Dentists and surgeons depend on it for precise manual tasks like suturing or tooth extraction.
 2. Tactile feedback helps dentists detect problems like caries or periodontal pockets.
 3. Conditions such as peripheral neuropathy can reduce this ability, making clinical tasks harder.
 4. Highlights the need to maintain good sensory health for effective clinical practice.

Neural Mechanisms

The brain integrates sensory input through specialized pathways, ensuring that information is processed efficiently and accurately

- Visual perception:
 1. Processed in the occipital lobe.
 2. Primary visual cortex (V1): Handles basic features like edges and motion.
 3. Ventral stream ("what" pathway): For object recognition.
 4. Dorsal stream ("where" pathway): For spatial navigation.
- Auditory perception:
 1. Processed in the temporal lobe.
 2. Primary auditory cortex: Analyses sound frequency and pitch.
- Damage effects:
 - **Cortical blindness**: Loss of vision despite healthy eyes.
 - **Central deafness**: Inability to process sound despite functional ears



Multisensory Integration

- Definition: In addition to sensory-specific pathways, certain brain regions integrate information from multiple senses.
- Key Area:
 - Parietal lobe → combines visual, auditory, and somatosensory inputs to create a unified perceptual experience.
- Example (Clinical):

When examining a patient, a clinician integrates:

1. Visual observations → e.g., skin discoloration.
2. Auditory cues → e.g., wheezing.
3. Tactile feedback → e.g., palpation findings.

→ **This integration helps form a comprehensive understanding of the patient's condition.**

(Calvert et al., 2004)

Clinical Relevance

- Perceptual deficits → Can seriously impact both patients and healthcare providers.
- Example: Neglect Syndrome
- Often occurs after right hemisphere strokes.
- Causes failure to perceive stimuli on one side of the body or environment.
- Behaviours include:
 1. Ignoring food on one side of the plate.
 2. Failing to dress one side of the body.
- Shows how impaired perception disrupts daily functioning.
- Rehabilitation Strategies:
 1. Visual scanning training.
 2. Prism adaptation therapy.

→ Aim: restore awareness and improve quality of life.

(Halligan et al., 2003)

Illusions

- Provide valuable insights into the fragility of perception

Ponzo Illusion

- Definition: Converging lines make objects appear different in size, even when they are the same.
- Effect: Contextual cues influence visual judgment.
- Clinical Example:
 - In radiology, surrounding structures may cause a doctor to overestimate or underestimate lesion size.
 - Awareness of this bias helps reduce diagnostic errors and improve patient care.

(Gregory, 1997)

Practical Implications for Medical and Dental Students

1. Importance of Understanding Perception

- Essential for observation, diagnosis, and patient interaction.

2. Recognising Limitations

- Human perception can be affected by:
 - Illusions (e.g., Ponzo illusion).
 - Fatigue.

3. Strategies to Reduce Errors

- Double-check visual findings with objective measurements.
- Use assistive technologies to improve accuracy.

4. Patient Communication

- Foster empathy and active listening.
- Ensure auditory and touch-based (somatosensory) observations match the patient's own experiences.
- Improves overall clinical care.

Key learning point
Perception includes organizing and interpreting sensory input to construct meaningful representations of the environment.

Critical Thinking

1. Challenges to the Sapir-Whorf Hypothesis and Linguistic Determinism

- Question: Can thoughts exist without language, or does language define the boundaries of cognition?

2. Ethical Concerns About False Memories vs. Uncovering Trauma

- Question: Should repressed memories recovered through therapy be trusted as factual?

1. Sapir-Whorf Hypothesis & Linguistic Determinism

- Idea: This theory suggests that the language you speak shapes or limits the way you think.
- The debate:
 - Some people say you can have thoughts without words (for example, babies, animals, or thinking in images).
 - Others argue that language creates the boundaries of your thinking — meaning, if you don't have a word for something, you might not be able to fully think about it.

Example: If a language has no word for "blue," does that mean its speakers see colours different?

2. False Memories vs. Uncovering Trauma

- Repressed memories: These are memories of traumatic events that a person might not consciously remember for years.
- Therapy: Sometimes, therapy tries to bring these memories back.

Extra :)

- **The ethical concern:**

- False memory risk → The brain can accidentally create memories that never happened, especially under suggestion.

- Real trauma → Sometimes, the memories are real and uncovering them helps healing.

- The question: Can we trust recovered memories as completely factual, or should we be cautious?

In short:

- First point → Is language necessary for thinking?

- Second point → Can we trust memories brought back in therapy, or could they be false?

Definition and Importance

1. What is Memory?

b• Memory is the mental process of encoding, storing, and retrieving information.

- It helps people keep knowledge over time.

2. Why is Memory Important?

- Memory is the base for:

- Learning.

- Decision-making.

- Effective communication—all important in clinical work.

3. For Medical and Dental Students:

- Understanding memory is key for:

- Mastering complex academic material.

- Using knowledge in patient care.

- Memory helps clinicians to:

- Recall patient histories.

- Remember treatment plans.

- Adapt to new diagnostic challenges.

4. Limitations of Memory:

- Memory is not perfect.

- Mistakes or distortions can cause:

- Errors in judgment.

- Misdiagnoses.

- Patient safety risks.

(Baddeley et al.)

5. Recent Advances:

- Memory research has grown because of its role in:

- Education.

- Aging.

- Neurological disorders.

- Neuroscience has shown how memory works biologically and how it can be improved or impaired.

(Eichenbaum, 2017)

6. In Healthcare:

- Better memory knowledge helps to:

- Improve learning methods.

- Enhance patient outcomes.

- Manage conditions like dementia and PTSD

Types of Memory

Step 1: Sensory Memory

- Function: Briefly holds sensory input, making the world feel continuous and coherent.

- Examples:

- Visual afterimages.

- Echoes of sound.

- Duration: Very short, milliseconds to seconds.

- Role in healthcare:

- Helps professionals quickly detect subtle patient changes (e.g., vital signs, facial expressions).

- (Atkinson & Shiffrin, 1968)

Step 2: Short-Term Memory (STM)

- Function: Temporarily holds a small amount of information for immediate use.
- Duration: About 20-30 seconds.
- Importance:
- Needed for active tasks like:
- Calculating medication doses.
- Remembering symptoms during exams.
- Limitations:
- Capacity affected by stress, fatigue, and cognitive load.
- Example: Clinician may forget important info if interrupted during consultation.
- Clinical relevance: Minimizing distractions is important.
- (Miller, 1956)

Step 3: Long-Term Memory (LTM)

- Function: Stores information indefinitely.
- Types:
- Semantic memory: Facts and knowledge (e.g., anatomy of teeth).
- Episodic memory: Personal experiences.
- Procedural memory: Skills (e.g., suturing, cavity preparation).
- Role in healthcare:
- Allows clinicians to use past knowledge and skills during diagnosis and procedures.
- (Tulving, 2001)

Neural Mechanisms of Memory

1. Memory relies on complex brain networks distributed in different areas.

2. Hippocampus (in the medial temporal lobe):

- Central for encoding and consolidating new memories.
- Especially important for episodic (events) and spatial memory.
- Damage (e.g., in Alzheimer's disease) causes difficulty forming new memories.

(Squire, 2004)

3. Memory storage after consolidation:

- Stored in various cortical regions.
- Prefrontal cortex: Handles working memory and executive functions (manipulating and prioritizing info).
- Cerebellum and basal ganglia: Important for procedural memory (motor skills, habits).

(D'Esposito et al., 1998)

4. Understanding neural pathways helps explain:

- How neurological diseases disrupt memory.
- How rehab can target specific brain areas.

Clinical Implications of Memory

1. False Memories and Diagnostic Bias

- False memories: Remembering events that didn't happen or confusing sources of information.
- In clinical practice:
- Can cause diagnostic errors if clinicians rely on wrong memories about patient symptoms or case details.
- Example: A doctor misremembers symptoms because of suggestion or confirmation bias → wrong treatment.

- Solution:
- Document patient encounters carefully.
- Confirm patient reports with objective data.

(Loftus, 2005)

2. Memory Decline in Aging and Neurological Disorders

- Common in older adults: trouble recalling names, dates, recent events.
- Alzheimer's disease worsens memory loss, causing serious daily problems.
- Early detection by cognitive tests helps:
- Start treatments (drugs or rehab) earlier.

(Beason-Held et al., 2017)

3. Flashbulb Memories and Trauma

- Flashbulb memories are very clear, detailed memories of strong emotional events, like trauma or big life moments.
- People often think these memories are very accurate, but research shows they can change or become wrong over time.
- In people with trauma, intrusive flashbacks (unwanted, repeated memories) happen in PTSD and disrupt daily life.
- Treatments like cognitive-behavioral therapy and eye movement desensitization and reprocessing (EMDR) help manage these flashbacks.

(Brown & Kulik, 1977)

4. Enhancing Memory in Medical Education

Key learning point
Working Memory temporarily holds and manipulates information for decision-making, problem-solving, and learning.

- Medical and dental students must remember a lot of information.
- Ways to improve memory include:
- Spaced repetition (reviewing info many times over days or weeks)
- Active recall (testing yourself on the info)
- Interleaved practice (mixing different subjects during study)
- Using flashcards or apps like Anki helps by repeating important ideas often.
- Good sleep, nutrition, and managing stress help memory stay strong and make recalling easier.

(Rocdigier & Butler, 2011)

5. Examples from Clinical Practice

- Medication Errors:
- Nurses might give the wrong medicine dose because short-term memory fails when multitasking or interrupted.
- This shows the need for clear work steps and double-checking to avoid mistakes.
- Patient Compliance:
- Patients may forget to follow treatment because of poor episodic memory (memory of events).
- Giving written instructions, pictures, or app reminders helps patients follow their treatment better.
- Memory Rehabilitation:
- Stroke patients with anterograde amnesia (can't make new memories) use tools like calendars and alarms.
- Therapists teach patients to use these aids to help them live more independently.

Definition and Importance

- Language is a complex system that helps humans communicate using symbols, sounds, and rules.
- It has several parts that work together: phonology (sound patterns), syntax (grammar), semantics (meaning), and pragmatics (using language in context).
- In clinical practice, language is very important for:
- Talking with patients
- Making accurate diagnoses
- Planning treatment
- For medical and dental students, understanding language helps with:
- Learning technical terms
- Communicating clearly and kindly with patients from different backgrounds
- Language problems can affect healthcare, so it's important to know about how language works in the brain and about language disorders (Pinker, 1994).

Components of Language

Language has four main parts, each important for communication:

1. Phonology

- Deals with sound patterns and rules for combining sounds into words.
- Example: Knowing the difference between “hypertension” and “hyperthyroidism” is important.
- Mistakes with sounds can cause diagnosis or treatment errors.

2. Syntax

- The grammar rules that show how words make sentences.
- Using correct syntax makes communication clear, especially for medical instructions.
- Example: Saying “Take this medication twice daily” is clearer than a complicated sentence, helping patient understand and follow treatment.

3. Semantics

- Focuses on the meaning of words and phrases.
- Getting meaning right avoids miscommunication in healthcare.
- Example: Knowing if a patient’s “dizzy” means lightheadedness or vertigo is important because they are different conditions

4. Pragmatics

- The social and context part of language, including tone, purpose, and culture.
- Good pragmatic skills help doctors and dentists adjust how they speak so patients understand and feel comfortable.

• **Vertigo** → You feel like you or the room is spinning. Usually from an inner ear problem.

• **Lightheadedness** → You feel like you might faint. Usually from low blood pressure,

dehydration, or not enough blood to the brain

Neural Basis of Language

Language processing happens mainly in two key brain regions:

1. Broca's Area

- Location: Left frontal lobe.
- Function: Responsible for speech production and articulation.
- Damage: Causes expressive aphasia → difficulty forming complete sentences but comprehension stays intact.
- Example speech: Patient may say short, broken phrases like "want water" instead of "I would like a glass of water."

2. Wernicke's Area(involved in language comprehension. Damage

- Location: Left temporal lobe.
- Function: Responsible for understanding language (spoken or written).
- Damage: Causes receptive aphasia → patient can speak fluently but the speech is nonsensical ("word salad") and they cannot understand language well.(struggle to understand spoken or written language

3. Arcuate Fasciculus

- Description: A bundle of nerve fibers that connects Broca's area and Wernicke's area.
- Function: Allows integration of speech production and comprehension.
- Damage: Causes conduction aphasia → patient has trouble repeating words or phrases, but comprehension and fluency are mostly preserved.

1. Broca's → makes speech → damage = understand but can't speak well ("want water").

2. Wernicke's → understands speech → damage = speak fluently but nonsense ("blue water tree").

3. Arcuate fasciculus → repeats speech → damage = can talk & understand but can't repeat exactly.

Developmental and Acquired Language Disorders

1. Developmental Disorders

- Dyslexia
- A learning disorder with difficulties in reading and decoding written language.
- Problems: trouble recognizing letters, spelling words, understanding text.
- Impact: affects academic performance and self-esteem.
- Help: phonics-based instruction and assistive technologies.
- (Simpson, 2000)
- Specific Language Impairment (SLI)
- Delayed language development without hearing loss or intellectual disability.
- Signs: delayed vocabulary, grammatical errors, poor sentence construction.
- Help: speech-language therapy for language development.
- (Leonard, 2017)

2. Acquired Disorders

- Aphasia
- Caused by strokes, traumatic brain injuries, or neurodegenerative diseases (e.g., Alzheimer's).
- Types: expressive, receptive, or global aphasia.
- Example: stroke in Wernicke's area → cannot understand instructions during a dental procedure.
- Help: speech therapy and rehabilitation programs.
- (Hillis, 2007)
- Primary Progressive Aphasia (PPA)
- A subtype of frontotemporal dementia.
- Gradual loss of language abilities; other thinking skills stay normal at first.
- Signs: trouble naming objects, following conversations, writing clearly.
- Importance: early recognition → proper referral and support

Clinical Implications of Language Disorders

1. Miscommunication in Patient Interactions
 - Language impairments can cause misunderstandings.
 - Example: receptive aphasia → patient cannot understand postoperative instructions → higher risk of complications.
 - Solution: use visual aids, simplified language, and confirmation techniques (“Can you repeat what I said?”).
2. Cultural and Linguistic Diversity
 - Non-English-speaking patients may face more difficulties.
 - Solution: use professional interpreters or translation services.
 - Example: explaining surgery to a non-native speaker → must adjust semantics (meaning) and pragmatics (context) to avoid confusion.
3. Impact of Neurological Conditions
 - Disorders like Parkinson’s disease or ALS (Amyotrophic Lateral Sclerosis) affect articulation and voice quality.
 - Problem: patient cannot express themselves clearly.
 - Solution: speech-language pathologists provide AAC tools (e.g., text-to-speech devices) augmentative and alternative communication (AAC) tools, such as text-to-speech devices, to maintain functional communication

4. Language Development in Pediatric Populations:

- Early detection of language delays is important.
- Example: A toddler not using two-word phrases by age 2 should see a speech therapist.
- Early help can prevent future academic and social problems (Rice et al., 2008).

Practical Examples in Clinical Practice:

- **Aphasia After Stroke:**

Patient has trouble speaking symptoms; clinician uses yes/no questions and pictures to communicate.

- **Dyslexia in Medical Education:**

A medical student with dyslexia uses audiobooks, mind maps, and spaced repetition to manage reading and studying.

- **Cultural Sensitivity in Dentistry:**

Dentist uses a professional interpreter to explain a root canal to a non-English-speaking patient clearly

Key Learning Point:

1. Noam Chomsky’s Language Acquisition Device (LAD):

- Humans are born with an inbuilt system called LAD.
- It helps children learn language quickly and naturally.

2. Eric Lenneberg’s Critical Period Hypothesis (CPH):

- There is a biological time window (up to puberty) for the best language learning.
- This period is called the critical period.

3. How LAD and CPH work together:

- LAD works best during the critical period.
- This means children learn language easily because their brain is ready and it’s the right time.

4. Why this matters:

- Language learning is easy in childhood but harder as we get older.
- This helps explain why early bilingual education and early treatment of language problems are important.

Key learning point

Noam Chomsky proposed that humans are born with an innate Language Acquisition Device (LAD), a hypothetical mechanism enabling children to learn language rapidly and intuitively. On the other hand, critical Period Hypothesis (CPH) proposed by Eric Lenneberg, the critical period posits a biologically determined window (up to ~puberty) for optimal language acquisition. The LAD operates most effectively within the critical period, combining innate readiness with developmental timing. Together, they explain why language acquisition is effortless in childhood but becomes harder with age, shaping educational practices (e.g., early bilingual exposure) and interventions for language disorders.

Practical Applications: Cognitive Processes in Clinical Cases

Cognitive processes like attention, perception, memory, and language are very important for diagnosing, managing, and treating patients in medicine and dentistry.

Below are examples showing how these processes affect patients with Multiple Sclerosis (MS), Stroke, and ADHD, and how GPs or dentists manage these cases.

1. Multiple Sclerosis (MS) Case

Clinical Presentation:

- Patient: 45 years old with MS.
- Complaints at GP: fatigue, difficulty concentrating, memory lapses.
- Problems with fine motor skills during daily tasks.
- At dentist: struggles to follow instructions because of cognitive fog and sensory problems.

Cognitive Implications:

- Attention: Difficulty keeping focus and multitasking.
- Perception: Problems sensing things accurately (like touch or body position).
- Memory: Trouble remembering advice or instructions.
- Language: Usually no major language problems, but slower thinking can make communication harder.

Management Strategies for ms

- **At the GP:**
 - Use clear and short instructions.
 - Give written summaries of treatment plans.
 - Suggest using calendars or phone apps to track meds and appointments.
 - Refer to occupational therapy to help with attention and planning.
- **At the Dentist:**
 - Make instructions simple and show how to do things visually.
 - Give extra time during appointments to reduce stress.
 - Use softer dental tools if patient is sensitive to touch.

2. Stroke Case

Clinical Presentation:

- Patient: 60 years old stroke survivor.
- At GP: weakness on left side and difficulty speaking.
- At dentist: trouble describing pain (aphasia) and neglects the left side of mouth when brushing

Cognitive Implications:

- **Attention:** Hemispatial neglect (often after right hemisphere strokes) → decreased awareness of one side of body/environment.
- **Perception:** Visual-spatial problems may distort depth perception or recognition of facial symmetry.
- **Memory:** Short-term memory loss can affect recall of rehab exercises or medication regimens.
- **Language:** Aphasia affects speech production, comprehension, or both → harder patient-provider communication

- **Hemispatial neglect: Ignoring one side (usually left) after brain damage.**
- **Why right hemisphere: Right controls attention to both sides; left controls only right.**

Damage to right → left side ignored; damage to left → right side still covered by right hemisphere

Management Strategies:

At the GP:

1. Assess cognitive and physical deficits to design rehab programs.
2. Use visuals and repetition to reinforce verbal instructions.
3. Work with speech-language pathologists to address aphasia and improve communication.

At the Dentist:

1. Use yes/no questions or picture-based tools for patients with expressive aphasia.
2. Focus on the neglected side during exams/treatments for full care.
3. Teach caregivers oral hygiene techniques to manage unilateral neglect.

3. ADHD Case

Clinical Presentation:

- 10-year-old with ADHD at GP for routine check-ups.
- Parents report frequent forgetting of medications and struggles to sit still during consultations or dental procedures.

Cognitive Implications:

- Attention: Problems with sustained/selective attention → difficulty focusing on long discussions or tasks.
- Perception: Hyperactivity may cause overstimulation in busy environments.
- Memory: Poor working memory → forgetting instructions, meds, or dental hygiene steps.
- Language: Language skills usually fine, but impulsivity may cause interruptions or incomplete responses

Management Strategies:

At the GP:

- 1. Break down information into small, simple chunks; use visuals.
- 2. Use reminder systems (alarms, pill organizers) for medication schedules.
- 3. Involve parents in discussions to ensure accurate understanding.

At the Dentist:

- 1. Create a calm, low-noise environment.
- 2. Use positive reinforcement to encourage cooperation.
- 3. Give hands-on oral hygiene demonstrations to improve retention and compliance

Key Learning Point:

- Cognitive processes (attention, perception, memory, language) are essential for patient-centred care.
- Recognizing how these processes are affected in conditions like MS, stroke, and ADHD helps tailor

communication and treatment strategies.

- Applying this knowledge improves both diagnosis accuracy and patient satisfaction.

Psychology on the Ground:

- Examples:
- 1. Stroke with neglect → may ignore instructions for one side of body.
- 2. ADHD child → may seem disengaged due to attention deficits.
- 3. MS patient → may forget complex instructions, needs simplification and reminders.

General Considerations Across Cases:

- 1. Patient-Centered Communication: Adapt to patient’s abilities, simplify language, allow extra processing time.
- 2. Multimodal Approaches: Use verbal, written, and visual methods to reinforce messages.
- 3. Environmental Modifications: Reduce distractions (noise, bright lights), especially for ADHD or sensory issues.
- 4. Collaborative Care: Work with neurologists, occupational therapists, and speech-language pathologists for full care.

Psychology on the ground

Cognitive impairments often manifest differently in real-world clinical settings than they do in textbooks. For example:

- A stroke survivor with neglect syndrome may ignore instructions about caring for one side of their body.
- A child with ADHD may appear disengaged during consultations, not due to lack of interest but because of attention deficits.
- A patient with MS may struggle to recall complex medical advice, requiring simplified explanations and written reminders.

General Considerations Across Cases

Regardless of the condition, certain principles apply universally when managing patients with cognitive impairments:

1. **Patient-Centered Communication:** Tailor interactions to the individual’s cognitive abilities. For example, simplify language for patients with aphasia or memory deficits, and allow extra time for processing information.
2. **Multimodal Approaches:** Combine verbal, written, and visual methods to reinforce key messages. This strategy benefits patients with attention or memory challenges.
3. **Environmental Modifications:** Reduce environmental stimuli (e.g., noise, bright lights) to prevent overstimulation, particularly in patients with ADHD or sensory sensitivities.
4. **Collaborative Care:** Work with multidisciplinary teams, including neurologists, occupational therapists, and speech-language pathologists, to address complex needs comprehensively.

By grounding psychological principles in practical scenarios, clinicians can bridge the gap between theory and practice, ensuring that care is both compassionate and evidence-based.

Quick review and brief answers to unit questions

1. How do sensory inputs transform into meaningful perceptions?

Sensory inputs are transformed into meaningful perceptions through a three-step process:

- **Sensation:** Sensory receptors detect stimuli (e.g., light, sound, touch).
- **Organization:** The brain organizes raw sensory data into patterns, such as shapes or sounds.
- **Interpretation:** The brain assigns meaning to the organized information based on context, past experiences, and expectations.

For example, visual input from an X-ray is interpreted as a fracture due to the clinician’s training and contextual understanding.

2. What are the stages of memory, and how can they be disrupted?

Memory has three main stages:

- **Encoding:** Information is processed and stored. Disruptions can occur due to lack of attention or poor focus.
- **Storage:** Information is retained over time. Damage to the hippocampus (e.g., in Alzheimer’s disease) impairs long-term storage.
- **Retrieval:** Stored information is accessed. Stress, fatigue, or neurological conditions like dementia can hinder retrieval.

For instance, a stroke affecting the temporal lobe may disrupt semantic memory, making it hard to recall medical terminology.

3. How does attention influence learning and task performance?

Attention enhances learning and task performance by:

- Filtering irrelevant stimuli to focus on critical information.
- Enabling sustained concentration for complex tasks (e.g., reading medical charts).
- Facilitating selective attention to prioritize urgent tasks in high-pressure environments.

Impaired attention (e.g., due to ADHD or fatigue) can lead to errors, missed details, or reduced efficiency.

4. What are the neural bases of language processing, and how do disorders affect communication?

Language processing involves key brain regions:

- **Broca’s Area:** Responsible for speech production; damage causes expressive aphasia (difficulty speaking).
- **Wernicke’s Area:** Involved in comprehension; damage results in receptive aphasia (nonsensical speech).
- **Arcuate Fasciculus:** Connects these areas; disruption leads to conduction aphasia (impaired repetition).

Disorders like stroke, dementia, or developmental conditions (e.g., dyslexia) disrupt these pathways, affecting verbal and written communication.

5. What ethical considerations arise when addressing cognitive impairments in diverse populations?

Ethical considerations include:

- **Informed Consent:** Ensuring patients with cognitive impairments fully understand treatment options.
- **Cultural Sensitivity:** Adapting communication styles to respect cultural and linguistic differences.
- **Equitable Access:** Providing assistive tools or interpreters to bridge gaps in understanding.
- **Autonomy and Dignity:** Respecting patients’ independence while offering necessary support without paternalism.

For example, using professional interpreters for non-native speakers ensures accurate communication without bias or misunderstanding.

Do	Avoid
1. Simplify Communication: Use clear, concise language and avoid medical jargon. Break down complex information into smaller, manageable parts.	1. Overwhelm with Information: Avoid bombarding patients with too much information at once, as this can lead to confusion and poor retention.
2. Use Visual Aids: Incorporate diagrams, pictures, or demonstrations to reinforce verbal instructions, especially for patients with memory or language impairments.	2. Assume Understanding: Don’t assume that patients have understood your instructions; always confirm comprehension by asking them to repeat or demonstrate what was discussed.
3. Allow Extra Time: Be patient and give individuals sufficient time to process information, respond, or complete tasks. This is particularly important for patients with cognitive deficits.	3. Neglect Sensory Needs: Don’t overlook sensory impairments or sensitivities, such as tactile hypersensitivity in MS or visual-spatial deficits in stroke survivors.
4. Engage Caregivers: Involve family members or caregivers in discussions to ensure accurate transmission of information and adherence to treatment plans.	4. Rush Appointments: Avoid rushing consultations, as this can increase stress and reduce the quality of interactions, particularly for patients with cognitive or attentional challenges.
5. Adapt the Environment: Minimize distractions, noise, and sensory overload to create a calm and supportive setting, especially for patients with ADHD or sensory sensitivities.	5. Ignore Emotional Factors: Don’t disregard the emotional impact of cognitive impairments, such as frustration or anxiety, which can further hinder communication and cooperation.
6. Provide Written Summaries: Offer take-home materials, such as brochures or checklists, to help patients remember key points and follow through with instructions.	6. Use Complex Tools Without Training: Avoid introducing assistive devices or technologies without proper instruction, as this may lead to misuse or noncompliance.
7. Collaborate with Specialists: Work with multidisciplinary teams (e.g., speech therapists, occupational therapists) to address complex cognitive and physical needs comprehensively.	7. Dismiss Nonverbal Cues: Don’t ignore body language, facial expressions, or other nonverbal signals, as they can provide valuable insights into a patient’s level of understanding or discomfort.
8. Validate Patient Experiences: Acknowledge the challenges patients face due to cognitive impairments and reassure them that their concerns are understood and addressed.	8. Fail to Follow Up: Don’t leave patients without a plan for follow-up care or support, as this can exacerbate feelings of abandonment or uncertainty.

UNIT 3 / The Psychology of Human Development

Developmental Delays – Early Childhood

- Impact:
- If not found and treated early → can cause long-term health problems.

longitudinal study conducted by Glascoe and colleagues (2011)

1. 24-month-old child identified during routine developmental check.
 2. Signs: delayed speech, limited social interaction, poor response to commands.
 3. PEDS (Parents' Evaluation of Developmental Status) screening tool → multiple concerns found.
 4. Referral → confirmed language delay + social communication deficits.
 5. Started speech therapy + structured early education program.
 6. By age 4 → major improvement in language and social skills.
- Guidelines (AAP, 2006):
 - Structured developmental checks at regular visits → detect problems earlier than casual observation.
 - Early intervention before age 3 (when brain is highly adaptable) → best outcomes.
 - Reflection:
 - Use screening tools, involve parents, refer quickly.
 - Understanding child development is essential for lifelong health promotion

Human Development

Definition:

- Human development includes physical, cognitive, emotional, and social growth.
- It happens from conception to late adulthood.

Influenced by:

1. Biological factors (e.g., genetics, health).
2. Psychological factors (e.g., mental processes, emotions).
3. Environmental factors (e.g., family, culture, surroundings).

Life Course Paradigm:

- Focuses on timing, social context, and organization of life events.

Includes:

1. Social pathways – the life roles and patterns people follow.
2. Cumulative experiences – how past events build up to affect current development.
3. Turning points – major life changes that can shift a person's direction.

Importance of Nutrition & Lifestyle:

- Good nutrition and healthy lifestyle are important in all stages of life.
- Especially important during:
- Pregnancy.
- Early childhood.

Factors influencing development from conception:

1. Parental health.
2. Genetic inheritance.
3. Environmental influences

For medical students and healthcare professionals:

Step 1: Importance of Psychological Development

- Understanding psychological development is essential for:
- Providing age-appropriate care
- Recognizing typical and atypical growth sign

Step 2: Benefits of This Knowledge

- Helps build effective communication with patients
- Aids in understanding behavioral symptoms
- Supports emotional well-being at all life stages

Step 3: Application in Medical Practice

- Medical professionals meet patients at different development stages
- Example:
- Pediatricians focus on toddler milestones and early intervention
- Geriatric specialists focus on cognitive decline and emotional changes in the elderly

Step 4: Outcome of Understanding Human Development

- Leads to a more empathetic, informed, and person-centered approach
- Allows recognition of typical and atypical growth patterns
- Improves patient care at every life stage

Step 1: Three Foundational Processes of Human Development

- Growth
- Maturation
- Learning

Step 2: Nature of Each Process

- Growth and maturation are biological processes
- Learning is mostly behavioral

(Malina, 2014)

Step 3: Interaction Across Lifespan

- These processes interact dynamically throughout life
- Development is shaped by:
 - Evolutionary perspectives (biological-genetic)
 - Ontogenetic perspectives (social-cultural)

Step 4: Growth

- Growth means measurable physical changes over time
- Examples:
 - Increases in height, weight, and organ size
 - Growth is most obvious during infancy, childhood, and adolescence
 - Growth continues subtly throughout life adapting to biological and environmental factors

Step 5: Maturation (the genetically programmed unfolding of physical and behavioral traits)

- Maturation is the genetically programmed development of physical and behavioral traits
- It follows a biological timetable, independent of experience or learning
- Examples:
 - Walking
 - Onset of puberty
 - Development of certain reflexes
 - Shows natural progression toward physical and functional readiness

Step 6: Learning

- Learning is acquiring skills, behaviors, attitudes, and knowledge through:
 - Experience
 - Observation
 - Practice
- Learning depends heavily on environmental factors like:
 - Education
 - Cultural expectations
 - Social interactions
- Learning allows flexible adaptation to different life contexts

the genetically programmed unfolding of physical and behavioral traits

Step 7: Overall Interaction

- Growth, maturation, and learning work together dynamically
- They create the complex pattern of human development across life

Key learning point

Human development is a lifelong interaction between biological maturation and experiential learning

Major Theories of Human Development

- Human development has interested scholars, philosophers, and scientists for many years.
- It explains how people change and grow throughout life.
- These changes happen in:
 1. Physical – changes in the body and health.
 2. Cognitive – changes in thinking and learning.
 3. Emotional – changes in feelings.
 4. Social – changes in how we interact with others.
- These changes shape:
 - How people see the world.
 - How they act with others.
- Understanding these theories helps explain why people think, feel, and act differently at different ages.

The main theories are:

1. Freud's psychosexual theory
2. Erikson's psychosocial stages
3. Piaget's cognitive stages
4. Vygotsky's sociocultural theory

Freud's Psychosexual Theory

Key idea:

- Sigmund Freud (1856–1939) believed early childhood experiences strongly shape personality.
- Personality develops in stages, each focused on a body area called an erogenous zone.
- Stages: Oral → Anal → Phallic → Latency → Genital.
- If conflicts are not resolved in a stage → fixation can affect adult personality and behavior.

1. Oral Stage

- Age: Birth → 1 year
- Focus: Mouth (sucking, biting)(where pleasure is centered on activities involving the mouth)
- Pleasure source: Feeding, oral activities

2. Anal Stage

- Age: 1 → 3 years
- Focus: Bowel and bladder control
- Main themes: Control, independence (autonomy)

3. Phallic Stage

- Age: 3 → 6 years
- Focus: Genitals
- Key points:
- Oedipus complex: Boys → attraction to mother, rivalry with father
- Electra complex: Girls → attraction to father, rivalry with mother
- Superego forms → learns morals and taboos

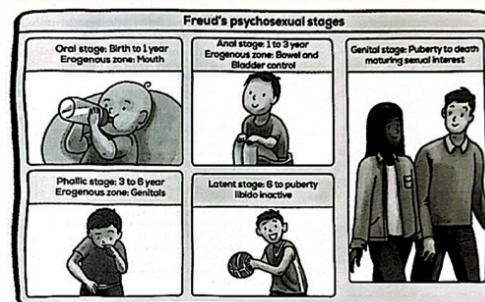
phallic stage is notable for the emergence of the Oedipus and Electra complexes, where children develop erotic attraction to the opposite-sex parent and rivalry with the same-sex parent (Mazur, 2021). During this stage, the superego forms, internalizing ethical principles and taboos

4. Latency Stage

- Age: 6 → 12 years
- Sexual feelings: Dormant (inactive)
- Focus: Social skills, learning, intellectual growth

5. Genital Stage

- Age: Adolescence → adulthood
- Focus: Mature sexual interests
- Goal: Forming intimate relationships



Freud's theory emphasized

that unresolved conflicts at any stage could lead to fixation and impact adult personality and behavior.

Key learning point

Early childhood experiences play a pivotal role in shaping later psychological development

Erikson's Psychosocial Development Theory

Key idea:

- Developed by Erik Erikson (1902–1994).
- Builds on Freud's ideas, but covers the entire lifespan (not just childhood).
- Has 8 stages, each with a psychosocial crisis → must be solved for healthy personality growth.

Stage 1: Infancy

- Crisis: Trust vs Mistrust
- Focus:
- Babies learn if they can trust their environment to meet needs (food, comfort, safety).
- Positive outcome → trust in people and world.
- Negative outcome → mistrust, fear, insecurity.

Stage 2: Early Childhood (1–3 years)

- Crisis: Autonomy vs Shame and Doubt
- Focus:
- Learning independence and personal control (toilet training, dressing).
- Success → confidence.
- Failure → shame and doubt

Stage 3: Preschool (3–6 years)

- Crisis: Initiative vs Guilt
- Focus:
- Starting activities, making plans.
- Success → sense of purpose.
- Failure → guilt and hesitation.

Stage 4: Middle Childhood (6–12 years)

- Crisis: Industry vs Inferiority
- Focus:
- Developing academic and social skills.
- Success → competence.
- Failure → feeling inferior.

Stage 5: Adolescence (12–18 years)

- Crisis: Identity vs Role Confusion
- Focus:
- Figuring out “Who am I?” and life goals.
- Success → strong identity.
- Failure → confusion about self and future.

Stage 6: Young Adulthood (18–40 years)

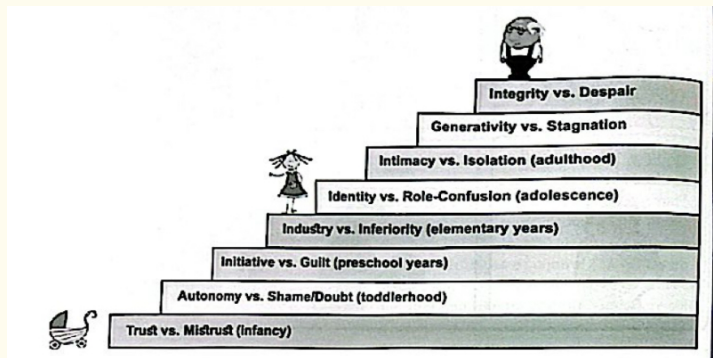
- Crisis: Intimacy vs Isolation
- Focus:
- Building close, loving relationships.
- Success → intimacy and commitment.
- Failure → loneliness and isolation.

Stage 7: Middle Adulthood (40–65 years)

- Crisis: Generativity vs Stagnation
- Focus:
- Contributing to society, guiding next generation.
- Success → sense of usefulness.
- Failure → stagnation and lack of purpose.

Stage 8: Late Adulthood (65+ years)

- Crisis: Integrity vs Despair
- Focus:
- Reflecting on life . • Success → satisfaction and peace , Failure → regret and despair



Piaget's Cognitive Development Theory

Key idea:

- Jean Piaget (1896–1980) showed that children actively build knowledge by interacting with their environment.
- Cognitive development happens in 4 stages, each with a different way of thinking.

Stage 1: Sensorimotor Stage (Birth–2 years)

- Learn through senses and movement.
- Develop object permanence → understanding that objects still exist even when unseen.

Stage 2: Preoperational Stage (2–7 years)

- Develop symbolic thinking (using words, images).
- Thinking is egocentric (seeing only own point of view).
- Thinking is intuitive, not logical.

Stage 3: Concrete Operational Stage (7–11 years)

- Begin logical thinking about real (concrete) situations.
- Understand conservation (quantity stays same despite shape change).
- Understand reversibility (actions can be undone).

Stage 4: Formal Operational Stage (12+ years)

- Develop abstract thinking.
- Can think about hypothetical situations.
- Can reason systematically to solve complex problems.

Piaget's work emphasized that cognitive development involves fundamental transformations in perception and reasoning, not just an accumulation of information.

Key learning point

Cognitive development progresses through a series of distinct stages, each laying the foundation for more complex thinking

Vygotsky's Sociocultural Theory

Key idea:

- Lev Vygotsky (1896–1934) believed that learning is shaped by social interaction and culture.
- Learning happens first with others, then becomes part of personal thinking.

Zone of Proximal Development (ZPD)

- The range of tasks a child can do with help from someone more skilled (teacher, parent, peer).
- Shows why guidance and cooperation improve learning.

How it works:

1. Social plane → learn with help from others.
2. psychological plane → skills become internal (can do alone).

Examples:

- Language learning: first by talking with others, then speaking/understanding alone.

The ZPD model aligns closely with

- Cooperative learning (students help each other).
- Instructional scaffolding (teacher supports until student can do it independently).
- Formative assessment (checking progress to guide help)

Key learning point

Cognitive growth is deeply embedded within social and cultural environments.

The Human Lifespan: Key Developmental Stages and Their Characteristics

Key idea:

- The human lifespan has 5 developmental stages:
 1. Infancy
 2. Childhood
 3. Adolescence
 4. Adulthood
 5. Aging
- Each stage has unique physical, cognitive, emotional, and social changes.
- These changes shape a person's growth and development.
- Understanding these stages helps in giving the right care, support, and interventions at each life stage.

Infancy (0–2 Years): The Foundation of Life

Physical Development

- Fastest growth stage in the human lifespan.
- Birth weight triples.
- Develop essential motor skills (movement, coordination).
- Brain grows rapidly; neural connections form at a speed never matched again in life.

Cognitive Development

- Matches Piaget's sensorimotor stage: learning through senses and movement.
- Key milestone → Object permanence: knowing objects still exist even if unseen.

Emotional Development

- Focuses on attachment (Bowlby's theory).
- Strong bonds with caregivers form the base for future relationships.

Social Development

- Progress from reflex actions to intentional communication.
- By 8 months → may develop stranger anxiety and separation anxiety.
- Growing social awareness.
- Language: starts with cooing and babbling → first words around 12 months

Childhood (3-12 Years): The Age of Learning and Exploration

- **Divisions of Childhood**
- Early childhood: 3-6 years
- Middle childhood: 7-12 years
- Each stage has different physical and mental growth features.
- **Physical Growth**
- Steady growth in body size.
- Motor skills improve and become more refined.
- Brain reaches about 90% of adult size by age 6, allowing better thinking abilities.
- **Cognitive Development**
- Moves through Piaget's stages:
- Preoperational stage (early childhood)
- Concrete operational stage (middle childhood)
- **Children develop:**
- Symbolic thinking (using words and images to represent objects)
- Language skills improve
- Logical reasoning starts to develop.
- **Emotional Development (Erikson's Theory)**
- Early childhood: Developing initiative (trying new things and taking action).
- Middle childhood: Developing industry (feeling competent and productive).
- **Social Development**
- Play changes from playing alongside others (parallel play) to playing together (cooperative play).
- Friendships become more important.
- Children learn social rules and how to interact with others.
- **Self-Concept and Self-Esteem**
- Becomes more developed, especially in middle childhood.
- Children begin to understand who they are and feel more confident. The development of self concept and self-esteem becomes prominent during middle childhood.

Adolescence (13-19 Years): The Transition to Adulthood

- **Physical Changes**
- Marked by puberty and big body changes.
- Brain reorganizes, especially the prefrontal cortex (helps with decision-making and controlling impulses).
- **Cognitive Development**
- Thinking becomes more advanced with abstract reasoning and problem-solving (Piaget's formal operational stage).
- Metacognition (thinking about thinking) develops.
- Near adult-level thinking skills.
- Emotional Development
- More sensitive to what others think (social evaluation).
- Increased risk-taking due to uneven brain development (limbic system develops faster than prefrontal cortex).
- **Social Development**
- Focus on forming identity (Erikson's identity vs. role confusion stage).
- Peer friendships become more important.
- Relationships with parents often change.
- Experimenting with different roles and beliefs to find themselves.
- 3 Stages of Adolescence
- Early Adolescence: Grades 5-9
- Middle Adolescence: Grades 9-12
- Late Adolescence/Early Adulthood: Post high school

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Adulthood (20-64 Years): Peak and Stability

- **Early Adulthood (20-40 years)**
- Peak physical condition.
- Focus on career, relationships, and possibly starting a family.
- **Middle Adulthood (40-64 years)**
- Gradual physical decline (muscle loss, bone density, slower metabolism).
- **Cognitive abilities stay mostly stable:**
- Crystallized intelligence (knowledge) increases.
- Fluid intelligence (processing speed) may decline.
- Emotional challenges like intimacy vs. isolation (early adulthood) and generativity vs. stagnation (middle adulthood) (Erikson).
- May experience "empty nest" when children leave and take care of aging parents.
- **Social Development**
- Focus on career growth, long-term partnerships, and parenting.
- Adjusting to new family roles and responsibilities

Aging (65+ Years): Wisdom and Decline

- **Physical Changes**
- Sensory decline (hearing, vision).
- Reduced mobility and more chronic illnesses.
- **Cognitive Changes**
- Some forgetfulness is normal.
- Others may develop dementia or serious memory issues.
- **Emotional Development**
- Erikson's stage of integrity vs. despair: reflecting on life with satisfaction or regret.
- **Social Changes**
- Role changes like retirement and widowhood.
- Increased need for support but many stay active and socially involved

Nature and Nurture in Human Development

- **Nature vs. Nurture**
- Human development is shaped by both biology and culture.
- **Nature (Biological factors):**
- Genetics
- Brain growth and maturation
- Hormones
- These provide the basic blueprint for how we develop.

- **Nurture (Cultural and Environmental factors):**
- Culture and environment influence how our biological potential is expressed and developed.
- Examples include family, society, and cultural practices.
- **Interaction Between Biology and Culture:**
- Biology and culture work together in a systematic way.
- Our inherited traits help us learn and adapt to the environment we live in.
- **Cultural Neuroscience:**
- Studies how culture and biology interact to affect our psychological processes.
- Looks at genetics, brain activity, and bodily functions.
- **Importance:**
- Understanding this interaction helps explain human development in different people and places

Biological Influences on Development

- **Role of Biology from Conception**
- Biology guides how the body and brain develop.
- Genetic inheritance determines:
 - Physical traits (e.g., eye color, height)
 - Risks for conditions like developmental delays and temperament.
- **Examples of Genetic Conditions**
- Chromosomal abnormalities like trisomy 21 (Down syndrome).
- Gene mutations such as FMR1 (linked to Fragile X syndrome).
- **Brain Development**
- Rapid growth happens especially in early childhood.
- Key brain areas developing include those for:
 - Sensory processing
 - Language
 - Emotional control.
- Brain development depends on:
 - Internal factors (nutrients, genes).
 - External factors (toxins, infections).
- **Neural Pathways**
- Early genetic and brain development form pathways that support thinking and behavior.
- **Hormones and Puberty**
- Hormone surges during puberty affect:
 - Emotional regulation
 - Risk-taking behavior
 - Identity formation.
- These hormonal changes influence brain-behavior connections, shaping development positively or negatively.
- **Importance of Puberty Changes**
- Crucial for starting romantic relationships and sexual activity, key tasks in adolescence

Key Learning Point

10 Basic Principles of Human Development

1. **Development is Lifelong:**
 - It continues through adulthood and aging, not just childhood.
2. **Development is Multidimensional:**
 - Changes happen in physical, cognitive, emotional, and social areas.
3. **Development is Multidirectional:**
 - Some skills improve while others may decline.
4. **Development is Flexible:**
 - The brain and behavior can change based on experiences.
5. **Development is Nature + Nurture:**
 - Genes interact with environment (nutrition, trauma, education).
 - Example: Height is genetic but can be affected by malnutrition.
6. **Development Involves Gains and Losses:**
 - Growing in one area may cause losses in another.
7. **Development is Cumulative:**
 - Early experiences matter, but later experiences can still change development.
8. **Development Goes from General to Specific:**
 - General skills develop first, then more specialized skills.

9. Development Proceeds from Top to Bottom and Inside to Outside:

- Head grows first, then downward. Internal organs develop before external parts.

10. Don't Compare Children's Development:

- Each child grows on their own timeline. Early speech or late walking don't determine intelligence or disability.

Cultural and Environmental Influences

• Culture's Role:

- Shapes how children grow and how parents raise them.
- Biology and culture work together to help kids learn relevant skills.
- Culture affects parenting, education, emotional expression, gender roles, and values like independence or group harmony.

• Example:

- Collectivist cultures (Japan, India) teach social harmony.
- Individualistic cultures (USA) encourage independence and confidence.

• Environmental Factors:

- Include socioeconomic status, nutrition, toxins, access to education and healthcare.
- Poverty can cause stress, fewer learning opportunities, and poor health.
- These factors affect brain growth and learning success

Cultural Norms and Human Development

- Cultural Influence on Developmental Milestones:
- Children reach milestones like walking or talking at different times depending on culture.
- Example:
- In Uganda, active motor training helps children walk earlier.
- In some cultures, verbal communication skills develop earlier because they are emphasized.

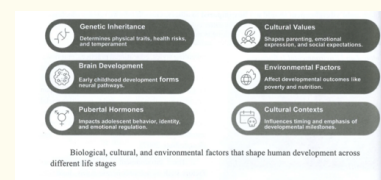
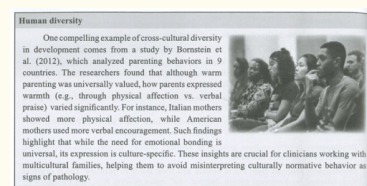
• Importance of Cultural Sensitivity:

- When assessing child development, it's important to consider cultural differences.
- What is normal in one culture might look different in another.

• Example of Cross-Cultural Parenting (Bornstein et al., 2012):

- Warm parenting is valued everywhere, but how warmth is shown varies:
- Italian mothers show warmth through physical affection.
- American mothers show warmth through verbal praise.
- Emotional bonding is universal, but the way it's expressed depends on culture.
- Why This Matters:
- Clinicians must understand cultural differences to avoid

wrongly seeing normal cultural behaviors as problems



Developmental Challenges Across the Lifespan

• General Overview:

- People go through psychological, emotional, and social changes at each stage of life.
- Each stage has its own developmental tasks and challenges.

• Childhood:

- Development is closely monitored and supported.

• Later Adolescence:

- Shift from concrete thinking → abstract thinking.

- Development of sexual self-awareness and personal identity.
- Important stage for transitioning from pediatric to adult healthcare.
- Best healthcare transition age: 18–21 years for lifelong well-being.

• Adulthood:

- Challenges influenced by family, friends, and social environment.
- Life changes may include career adjustments, relationships, and parenting.

• Older Adulthood:

- Common transitions: bereavement (loss of loved ones), retirement, relocation.
- These can affect physical health and emotional well-being.
- Requires compassionate care from both healthcare workers and family.

• Key Point for Healthcare Providers:

- Understanding life-stage transitions is essential to give age-appropriate, empathetic, and complete care

Challenges in Adolescence

- **Overview:**
 - Period of major biological, cognitive, and emotional changes.
 - Brain and body changes make teens more sensitive to rewards and emotional signals but less skilled at regulating emotions and behavior.
- **Biological & Hormonal Changes:**
 - Puberty triggers hormonal surges.
 - Physical growth and sexual maturity.
- **Emotional Changes:**
 - Mood swings are common.
 - Emotional regulation is still developing.
- **Cognitive Development:**
 - Growth in abstract thinking and reasoning skills.
- **Behavioral Patterns:**
 - Risk-taking behaviors (e.g., reckless driving, unsafe sexual activity, substance use).
 - Social influences can increase risky decisions.
- **Mental Health Risks:**
 - Around 15% of adolescents may develop psychological problems.
 - WHO (2021): 1 in 7 adolescents globally has a mental disorder.
 - Early detection and support are important.
- **Identity Formation:**
 - Central developmental task in adolescence.
 - Some may turn to risky behavior or substances to boost self-esteem.
- **Key Point:**
 - Adolescence is both a vulnerable and an opportunity-filled stage — brain, behavior, and thinking are being reorganized for adulthood.

Challenges in Adulthood

- Early Adulthood (20–40 years):
 - Main tasks: form close, meaningful relationships and build a career (Erikson: intimacy vs. isolation).
 - Struggling in these areas can lead to loneliness and disconnection

Erikson's theory of psychosocial development posits distinct stages across adulthood, influencing well-being and personal growth. In early adulthood, identity and intimacy are crucial for midlife satisfaction

Challenges in Adulthood (Continued)

- **Middle Adulthood** (40–64 years):
 - Main task: Generativity (contributing to society, helping the next generation).
 - Strongly linked to psychological well-being, especially for women.
 - Crucial for feeling satisfied in midlife.
- **Late Adulthood** (65+ years):
 - Main task: Integrity vs. despair (reflecting on life and facing mortality).
 - Healthy aging often involves life review and reminiscence (thinking about and making sense of past experiences).
 - Positive reflection can bring life satisfaction; negative reflection can lead to despair.
- **Erikson's Model:**
 - Provides a clear framework for aging stages.
 - Scientific evidence for strict “stage-like” progression is limited.
 - Practical Applications:
 - Encouraging activities like volunteer work can boost generativity and overall well-being in older adults

2020). Childhood relationships with parents influence adult offspring relationships and overall well-being (An & Cooney, 2006). The process of reminiscence and life review is considered healthy and necessary in late adulthood. Understanding these developmental stages can inform interventions for older adults, such as promoting volunteer work to enhance generativity and well-being.

Key learning point
Each stage of adulthood presents distinct developmental challenges that require psychological adaptation and support.

Critical Thinking

Is Adolescence a Universal “Storm and Stress” Period?

- **Original Idea:**
- Concept popularized by G. Stanley Hall (early 1900s).
- Claimed adolescence is naturally turbulent, with emotional volatility and rebellion.
- **Modern Research:**
- Challenges the idea that all teens experience “storm and stress.”
- Adolescent behavior varies greatly by culture, family structure, and social norms.
- **Cultural Differences:**
- Collectivist societies (e.g., Japan, China):
- Lower conflict with parents/authority figures.
- Greater emphasis on harmony and respect.
- **Individualistic societies (e.g., USA, Western Europe):**
- Encourage independence and self-expression.
- Can appear as defiance or stronger emotional reactions.
- **Key Question:**
- Are adolescent challenges biological or culturally shaped?
- Practical Implication:
- Professionals must consider cultural context when assessing teen behavior.
- Avoid mislabeling culturally normal behaviors as psychological problems

Evaluating Developmental Awareness

- **Why It Matters:**
- Knowing theories of human development is important, but healthcare professionals must also understand their own developmental awareness.
- Key skills: emotional intelligence, empathy, and interpersonal sensitivity.
- Benefits:
- Better patient communication
- Reduced burnout
- Stronger teamwork in healthcare settings
- **Role in Healthcare:**
- Professionals often face emotionally charged situations (e.g., giving bad news, calming families).
- Emotional regulation and social competence directly affect patient satisfaction.
- Self-assessment of strengths and areas for growth is a clinical necessity, not optional.

Emotional Intelligence (EI) and Healthcare

- Definition of EI:
- Includes self-awareness, self-regulation, motivation, empathy, and social skills.
- **Importance in Healthcare:**
- Helps manage stress and improve teamwork.
- Enhances patient care and professional success.
- Leads to better work-life balance.
- **Evidence & Applications:**
- Nurses with high EI have stronger interpersonal relationships and job performance.
- EI training should be part of nursing education and ongoing professional development.
- COVID-19 pandemic showed EI's value in building resilience and improving communication.
- Supports culturally sensitive care and meeting diverse patient needs.
- **Core Competency:**
- EI is essential for both clinicians and healthcare administrators.
- Improves management, clinician-patient relationships, and overall healthcare outcomes.
- Evaluating emotional competence is key to psychological maturity and career growth.

Key learning point

Emotional intelligence plays a critical role in effective patient care and personal well-being in healthcare environments.

Practical Applications for Healthcare Professionals

- **Why Understanding Development Matters:**
- Helps medical professionals adapt communication and treatment to each patient’s developmental stage.
- Allows care to match patients’ age, needs, and life circumstances.
- **Role in Medical Practice:**
- **Family physicians:**
- Give anticipatory guidance during key developmental transitions.
- Support patients through life events where health and family dynamics intersect.
- Recognizes that growth and change continue throughout adulthood.
- **Lifespan Approach:**
- Every life stage has unique challenges and opportunities for medical intervention.
- Viewing patients through a developmental lens helps address age-specific health risks and psychosocial

issues, such as:

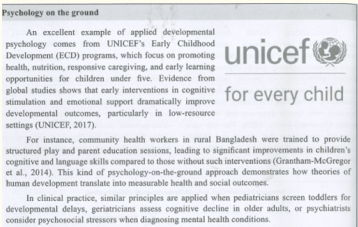
- Obesity
- Sleep problems
- Substance use
- Relationship concerns
- Integrated Care Approach:
- Considers the interaction between developmental processes and health outcomes.
- Improves personalized care across the lifespan.

Key learning point

To help healthcare professionals integrate developmental insights effectively, here is a summary of key practical recommendations.

Psychology on the Ground

- **Example: UNICEF’s Early Childhood Development (ECD) Programs**
- Focus areas:
- Health
- Nutrition
- Responsive caregiving
- Early learning opportunities (for children under 5)
- Evidence shows early cognitive stimulation + emotional support improve developmental outcomes, especially in low-resource settings.
- Case Study – Bangladesh:
- Community health workers trained to provide:
- Structured play sessions
- Parent education
- Result: Children showed significant gains in cognitive and language skills compared to those without the program.
- **Key Lesson:**
- Applied developmental psychology can turn theory into measurable health and social improvements.
- Applications in Clinical Practice:
- Pediatricians → Screen toddlers for developmental delays.
- Geriatricians → Assess cognitive decline in older adults.
- Psychiatrists → Consider psychosocial stressors in mental health diagnoses



Quick review and brief answers to unit questions	
Here's a concise summary addressing the critical thinking questions posed earlier:	
1. How do early childhood experiences shape later life outcomes?	Early experiences, particularly attachment and caregiving quality, lay the groundwork for emotional regulation, social skills, and resilience, influencing health and well-being across the lifespan (Berk, 2018).
2. What role do biological factors play in development?	Biological factors such as genetics, brain maturation, and hormonal changes provide the framework within which physical, cognitive, and emotional development unfold (Papalia et al., 2019).
3. How does culture influence development?	Culture shapes parenting practices, social norms, expectations for maturity, and emotional expression, leading to variations in developmental pathways across societies (Kagitcibasi, 2007).
4. Why is adolescence considered a critical stage?	Adolescence involves identity exploration, heightened emotional reactivity, and social repositioning, making it a key period for psychosocial and cognitive change (Steinberg, 2005).
5. How can knowledge of development improve healthcare practice?	By understanding age-specific needs, healthcare providers can tailor communication, anticipate challenges, and design interventions that align with a patient's developmental stage (Santrock, 2020).
6. What are major challenges in adulthood and aging?	Adults navigate relationship commitments, career development, caregiving roles, and later, coping with physical decline, social loss, and meaning-making in old age (Erikson, 1950).
7. How does emotional intelligence impact healthcare delivery?	High emotional intelligence improves empathy, communication, teamwork, and stress management, all of which are critical in clinical settings (Goleman, 2006).

Do	Avoid
Conduct regular developmental screenings during pediatric visits.	Assume all children reach milestones at the same rate.
Recognize cultural differences in developmental expectations and behaviors.	Apply Western-based developmental norms universally without adjustment.
Use age-appropriate communication strategies with patients.	Overload young patients with technical details or complex medical language.
Provide emotional support tailored to the patient's psychosocial stage.	Ignore emotional distress or dismiss it as unrelated to medical care.
Promote parental or caregiver involvement in treatment plans.	Overlook the family context when designing interventions.
Assess older adults holistically, including cognitive, social, and emotional aspects.	Focus solely on physical symptoms in elderly patients.
Encourage ongoing emotional intelligence training within healthcare teams.	Assume technical competence alone ensures high-quality care.
Reflect on your own emotional state during patient interactions.	Suppress or ignore signs of professional burnout or compassion fatigue.
Offer referrals to developmental or psychological specialists when needed.	Delay intervention due to uncertainty or lack of training.