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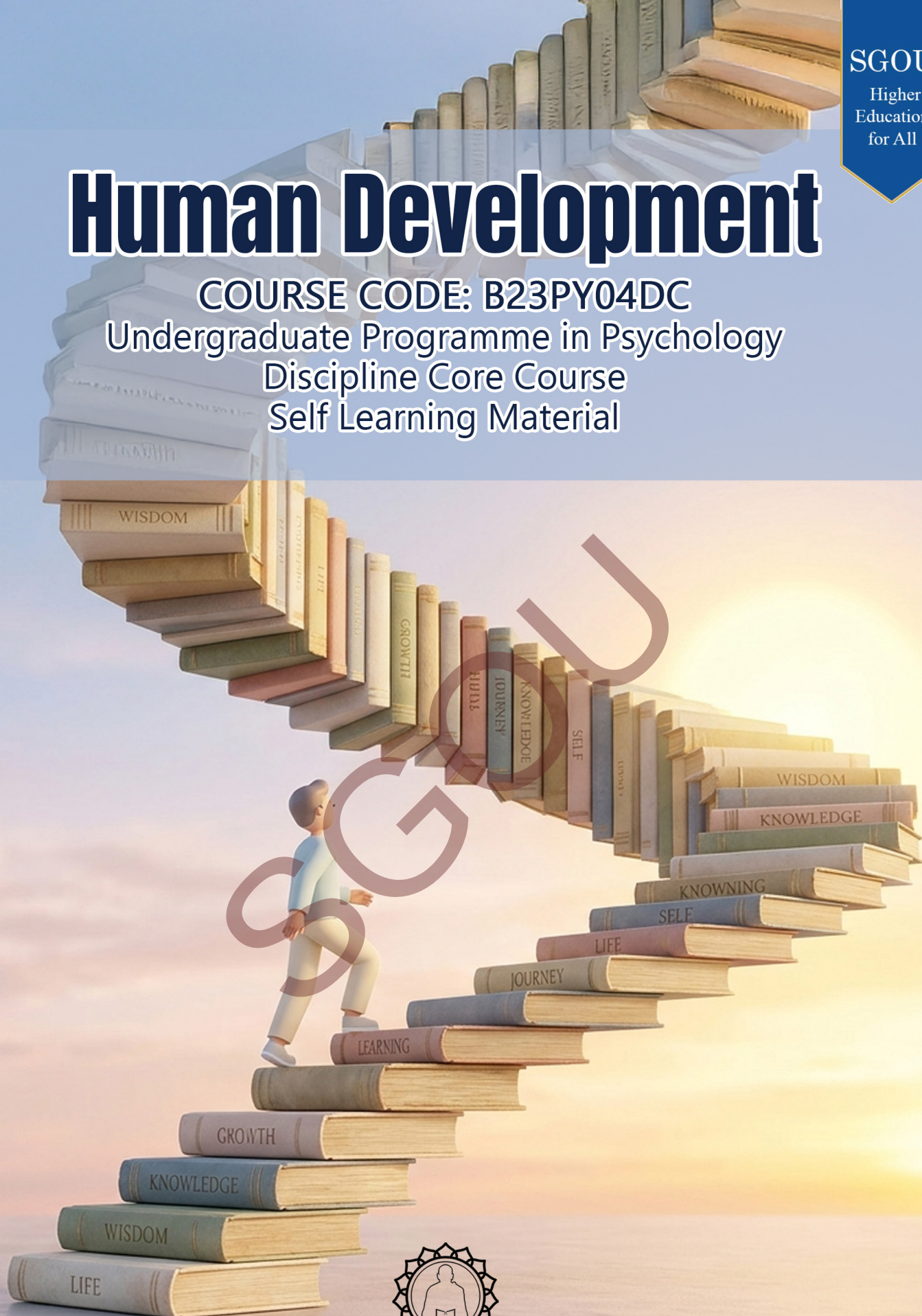
Human Development

COURSE CODE: B23PY04DC

Undergraduate Programme in Psychology

Discipline Core Course

Self Learning Material



SREENARAYANAGURU
OPEN UNIVERSITY

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The State University for Education, Training and Research in Blended Format, Kerala

SREENARAYANAGURU OPEN UNIVERSITY

Vision

To increase access of potential learners of all categories to higher education, research and training, and ensure equity through delivery of high quality processes and outcomes fostering inclusive educational empowerment for social advancement.

Mission

To be benchmarked as a model for conservation and dissemination of knowledge and skill on blended and virtual mode in education, training and research for normal, continuing, and adult learners.

Pathway

Access and Quality define Equity.

Human Development
Course Code: B23PY04DC
Semester - IV

Discipline Core Course
Undergraduate Programme in Psychology
Self Learning Material
(With Model Question Paper Sets)



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The State University for Education, Training and Research in Blended Format, Kerala



HUMAN DEVELOPMENT

Course Code: B23PY04DC

Semester- IV

Discipline Core Course

Undergraduate Programme in Psychology

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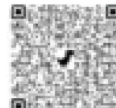
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Dear learner,

I extend my heartfelt greetings and profound enthusiasm as I warmly welcome you to Sreenarayanaguru Open University. Established in September 2020 as a state-led endeavour to promote higher education through open and distance learning modes, our institution was shaped by the guiding principle that access and quality are the cornerstones of equity. We have firmly resolved to uphold the highest standards of education, setting the benchmark and charting the course.

The courses offered by the Sreenarayanaguru Open University aim to strike a quality balance, ensuring students are equipped for both personal growth and professional excellence. The University embraces the widely acclaimed “blended format,” a practical framework that harmoniously integrates Self-Learning Materials, Classroom Counseling, and Virtual modes, fostering a dynamic and enriching experience for both learners and instructors.

The university aims to offer you an engaging and thought-provoking educational journey. The undergraduate programme in Psychology is designed to match the high standards of top universities across the country. We have included the most up-to-date methods for teaching psychological concepts and ideas in our curriculum. This approach helps spark learners’ interest and encourages them to go deeper into the subject. Our courses cover both theories and real-world examples, giving the learner a well-rounded understanding of psychology. The Self-Learning Material has been meticulously crafted, incorporating relevant examples to facilitate better comprehension.

Rest assured, the university’s student support services will be at your disposal throughout your academic journey, readily available to address any concerns or grievances you may encounter. We encourage you to reach out to us freely regarding any matter about your academic programme. It is our sincere wish that you achieve the utmost success.



Warm regards.
Dr. Jagathy Raj V. P.

01-03-2026

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**BLOCK
1**

Introduction



Unit 1

Scope and Methods

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ♦ define and differentiate the concepts of growth and development
- ♦ explain the three major domains of development
- ♦ evaluate the classical debates and issues in developmental psychology
- ♦ discuss the longitudinal, cross-sectional, and sequential research in developmental psychology

Prerequisite

Somewhere in the early years of life, an infant begins to make sense of the world in ways they could not, perhaps even the day before, almost imperceptibly. A voice once heard merely as sound becomes recognised as someone; a gesture comes to signify an intention; a day becomes remembered as time; and attempts to reach for an object develop into a sense of agency in the world. What begins as life happening to them gradually becomes a life they actively participate in, interpret, adapt, and organise to become the person that they are, a process that defines every subsequent stage of being human.

Now, pause to reflect on your own life from childhood to the present. How has your body changed? How have your thinking, emotions, and relationships evolved? And yet you remain the same person! Are these simply changes, or is there more? As you reflect, you will realise that these are also the fundamental questions that guide the field of enquiry in developmental psychology. Which of them arise from our biology and which from our environment and experiences? Why do some developmental processes, like language acquisition, follow predictable developmental

patterns common to all humans, while others, such as personality development, reflect unique paths shaped by individual biology and environment? Why do some aspects of us remain steady over the years, while others change subtly, often noticed only in hindsight? How do researchers study and trace such processes through the years, across ages, and within experiences that differ from person to person?

Beginning this unit, you will enter this enquiry exploring how physical growth, cognitive development, and social or cultural experiences interact to form a human that is continuous, evolving, and always becoming something more than it was across the entire span of being that human.

Keywords

Growth, Development, Quantitative, Qualitative, Cohort, Domains, Lifespan, Nature versus Nurture, Stability versus Change, Continuity versus Discontinuity, Longitudinal Research, Cross-sectional Research, Sequential Research

Discussion

1.1.1. Growth and Development

Reflect once more on yourself, from your earliest days until the present. You feel the same person throughout, yet almost everything about you have changed. Your body, beliefs, preferences, and ways of interacting with the world have evolved. Of these, which would you describe as growth and which as development?

For instance, you may notice that you have become taller or that your limbs have lengthened, *changes that are biological*. Alongside these, you have likely experienced other changes, such as developing the ability to reason more complexly, to understand another person's point of view, or to form deeper, reciprocal relationships, *changes that are more functional in nature*.

Thus, while both are forms of human change and are closely related, we recognise the first instance as growth and the second as development. Building on this, let us now examine how growth and development are defined and what their characteristics are.

1.1.1.1. Definition

Being a biological process, growth can be defined as the physical changes that occur from conception to maturity. Most typically, it refers to the unidirectional quantitative



changes, the measurable increases you noted, such as an increase in height or limb length.

In contrast, development encompasses systematic, multidirectional changes and continuities in the individual that occur from conception across the lifespan. It is primarily qualitative in nature and involves shifts in how a person thinks, feels, behaves, and understands themselves and others.

While growth provides the necessary biological foundation for development, development is a more comprehensive and integrative process that includes growth as one component. For example, a child's increasing physical strength does not merely add muscle; it enables them to climb, explore, and interact with their surroundings in ways previously impossible, setting the stage for cognitive, emotional, and social advances.

Unlike growth, development reorganises patterns of functioning rather than adding to them. A child learning to conserve quantity, recognise another person's perspective, build friendships, or regulate emotions is not merely becoming more of something, but becoming *different* in how they engage with the world.

1.1.1.2. Characteristics

Understanding the core characteristics of growth and development helps clarify how each operates throughout the lifespan. The following section discusses the characteristics of each in brief.

Characteristics of Growth:

a. *Growth is a biological process*

Growth involves changes in body tissues, organs, and overall body structure, and is primarily driven by biological and genetic factors. For example, a change in bone density or the strengthening of muscles during adolescence.

b. *Growth is quantitative*

Growth refers to changes in physical attributes that can be measured and are often expressed numerically, reflecting an additive increase. Examples include measuring the increase in brain mass in kilograms or recording the number of teeth erupted.

c. *Growth is unidirectional and continuous*

Growth generally proceeds in one direction, towards an increase in size or complexity. It follows a steady, forward progression rather than reversing or fluctuating. For instance, a child increases in height consistently until maturity without losing the gains.

d. *Growth is predictable and occurs in specific directions*

Human growth tends to follow a predictable pattern, progressing in specific biological sequences, such as from head to toe (*cephalocaudal*) and from the centre of the body to the outward (*proximodistal*). For example, infants gain control over their head movements before their arms and legs.

e. Growth has a limited, predetermined course

Growth is constrained by the biological lifespan of the organism. Though it is most rapid in early years and adolescence, it typically slows and stabilises upon reaching physical maturity. The most typical example is the height of an individual, which increases rapidly in childhood and during puberty, but stops once adulthood is reached.

Characteristics of Development:

a. Development is qualitative

Development reflects changes in the quality of functioning, including cognitive, emotional, and social abilities, and is not typically quantifiable; like, a child learning to solve puzzles or developing empathy.

b. Development is a continuous (lifelong) process

Unlike growth, development is a continuous process extending from conception until death. Every age period, including adulthood and old age, involves change, such as a retiree developing new skills for managing leisure time.

c. Development is multidimensional

Development occurs across multiple, distinct yet interacting, domains such as the physical, cognitive, and psychosocial domains. For example, learning to drive requires physical dexterity (physical), attention and spatial awareness (cognitive), and emotional regulation during road rage (psychosocial).

d. Development is multidirectional

Development involves both gains (new skills) and losses (declines or reorganisation of old skills) throughout the lifespan. For instance, as an adult gains expertise in their career (gain), their capacity for rapidly learning new, arbitrary information may slightly decline (loss/reorganisation).

e. Development is contextual

Development is profoundly influenced by the individual's environment, social setting, and historical time period (*cohort effects*). For example, a person who grew up entirely during the age of the internet develops different cognitive and social skills compared to someone who did not.

f. Development is sequential

Development follows a specific predictable sequence dictated by physical maturation, even though the pace varies. Children typically sit before they crawl, crawl before they walk, and walk before they run.

g. Development reflects plasticity

Development is malleable and adaptable, influenced by environmental and social contexts. While plasticity often decreases with age, individuals remain adaptable and



capable of modification. For instance, an elderly person recovering from a stroke can, through therapy, re-engage their brain to take over damaged functions.

Cohort in Developmental Psychology

A cohort is a group of people who share a common characteristic, most often being born during a specific time period, or who experienced a similar historical or cultural event at the same point in their development. The concept of cohort is crucial in human development because of the ***cohort effect***. The cohort effect refers to differences between age groups that are due to the unique historical, social, and cultural experiences shared by that specific group, rather than to actual developmental changes related to age itself. Examples include *millennials* or *Gen Z*, and the concept is crucial for researchers to avoid misinterpreting age-related differences as being caused solely by maturation. For example, children in India who experienced formal schooling during the COVID-19 pandemic form a distinct cohort, as prolonged online education influenced their academic, social, and emotional development.

Understanding the characteristics of growth and development helps us appreciate that human change is neither random nor uniform. While growth provides the essential biological foundation, it is through development, which is dynamic, multifaceted, and adaptable, that we truly become who we are. When growth is quantitative and biologically limited, development is primarily qualitative and lifelong.

Table: 1.1.1. Growth *versus* Development

Aspect	Growth	Development
Definition	Physical changes from conception to maturity. Is unidirectional and measurable For example, an increase in height	Multidirectional changes in functioning, thinking, feeling, and behaving For example, learning to solve puzzles
Nature	Biological Process	Integrative and comprehensive, includes growth
Quantitative vs. Qualitative	Quantitative	Both
Direction/Pattern	Predictable, follows specific biological sequences	Sequential but flexible, involves gains and losses
Duration	Limited, predetermined course	Lifelong process

1.1.2 Domains of Human Development

Consider an infant learning to walk. Is the challenge primarily one of strengthening muscles and coordinating balance (*physical*), or understanding spatial relationships (*cognitive*), or coping with the fear of falling and seeking reassurance from caregivers (*psychosocial*)? The answer encompasses all three. The infant's body and emotions develop together in response to the environment, shaping how he or she moves, thinks, and relates to others.

Thus, human development is to be understood not as a sequence of isolated skills being acquired, but as a continuous and integrated process where biological, cognitive, and socioemotional experiences are inseparable. This fundamental coherence is why developmental psychologists, even while interested in studying the individual as a unified whole, organise the study of development into three distinct domains. This framework allows for a systematic study and focused examination of specific changes while emphasising the constant, reciprocal influence each domain exerts on the others.

Developmental psychologists have identified primarily three domains of human development:

1. Physical Domain
2. Cognitive Domain
3. Psychosocial Domain

1.1.2.1. Physical Domain

The physical domain encompasses the comprehensive biological and physiological transformations that occur across the lifespan, such as changes in the body, brain, motor capacities, and overall physiological functioning of an organism. This domain thus provides the biological foundation that dictates an organism's physical interactions and its adaptation to the environment.

The specific components of this domain include:

- *Somatic growth*, which refers to the quantitative and observable growth in stature, such as height or mass, reflecting the overall physiological increase in body size and composition.
- *Neurological maturation*, which involves the progressive development, myelination, and functional organisation of the central and peripheral nervous systems, which is critical for supporting all subsequent cognitive and motor capacities.
- *Motor skill acquisition*, which describes the sequential and cumulative development of complex movement patterns, including the refinement of both gross motor skills (which use large muscle movements for activities like walking and running) and fine motor skills (which use small muscles, particularly in the hand, for precise tasks like writing).



- *Physiological functioning*, which covers the dynamic alterations in the biological processes, such as metabolic rates, immune functions, hormonal regulations, etc., and the overall physical health across the entire lifespan.

The sequential emergence of locomotor skills, where an infant progresses from sitting unsupported to crawling and then to independent ambulation, is a direct manifestation of neuromuscular maturation and exemplifies this domain. Another example in this domain is the pubertal changes that occur during adolescence, characterised by significant hormonal fluctuations and the development of secondary sexual characteristics.

1.1.2.2. Cognitive Domain

The cognitive domain of human development involves the processes of thinking, learning, reasoning, memory, language, and problem-solving. It reflects how individuals acquire and organise knowledge, make sense of their environment, and employ their cognitive abilities to interpret everyday experiences. Cognitive abilities begin to form in infancy as children explore and interact with the world, continuing to expand across childhood, adolescence, and adulthood, supporting increasingly complex intellectual tasks. Development in this domain, however, is not always linear; it may include phases of rapid progress, periods of plateau, or temporary regressions influenced by biological maturation, health conditions, environmental stimulation, or psychological stress. In later adulthood, certain cognitive capacities, such as processing speed and episodic memory, may decline, while accumulated knowledge and experience often remain stable, indicating that cognitive development encompasses both growth and decline across the lifespan.

1.1.2.3. Psychosocial Domain

The psychosocial domain integrates the developmental changes pertaining to an individual's emotions, personality, and social functioning. This domain explores how individuals construct a sense of self, regulate emotional experiences, negotiate social roles, and maintain meaningful interpersonal relationships across the lifespan.

Examples include the emergence of attachment in infancy, the development of self-concept and peer relationships in childhood, the exploration of identity during adolescence, and identity consolidation in adulthood.

1.1.3. Key Issues in Human Development

Consider the case of an adolescent who develops an interest in creative writing after receiving positive feedback on a classroom assignment. Is this emerging talent the expression of an innate disposition, the result of environmental influences such as the teacher's positive feedback, or a reflection of the adolescent's growing capacity to articulate? Furthermore, will this interest evolve into a stable, enduring strength, or will new experiences and social priorities supersede it over time?

Questions of this nature illustrate that the study of human development is not only about identifying *what* changes but also about understanding *why*, *how*, and *under what* conditions these changes occur. Because development is shaped by multiple interacting forces, developmental psychologists frame their enquiry around several enduring and fundamental issues that guide our understanding of developmental processes.

Let us now discuss three cardinal issues that have long guided explanations of how and why development occurs.

1. Nature *versus* Nurture
2. Stability *versus* Change
3. Continuity *versus* Discontinuity

1.1.3.1. Nature *versus* Nurture

The nature-nurture issue examines the relative contributions of biological inheritance and environmental experience to human development. While nature encompasses all factors related to biological endowment, including genetic inheritance, inherent biological predispositions, and neurological maturation (brain development), nurture encompasses factors derived from the environment, such as family interactions, cultural context, educational opportunities, and various life events.

The contemporary developmental research has, however, moved beyond the simple either/or dichotomy, recognising that development results from a continuous, interactive interplay between the two. This interaction is clearly demonstrated when, for example, a child possesses a genetic predisposition for a trait such as musical ability. Environmental factors, such as the presence of supportive music teachers, access to instruments, and consistent practice opportunities, significantly shape the expression and eventual realisation of this potential.

1.1.3.2. Stability *versus* Change

The stability *versus* change issue addresses the fundamental question of whether an individual's psychological traits and characteristics remain consistent over the lifespan or if they undergo significant transformation due to developmental processes and experiences.

The stability viewpoint argues that many of the psychological qualities established in early childhood persist into adulthood. Proponents of this view often cite:

- *heredity*, the enduring influence of genetic factors and temperament, forming a core, stable personality structure;
- *early experience*, such as attachment styles, creating a foundational pattern that governs later behaviour and relationships;
- *predictive value*, or research demonstrating a high correlation between childhood and adult scores on certain traits such as intelligence.

On the contrary, the change perspective emphasises that individuals are highly adaptable and capable of undergoing profound psychological reorganisation across the lifespan. Proponents of this viewpoint cite:

- *plasticity*, which is the brain's ability to change and adapt in response to learning, experience, or injury;
- *lifespan development*, which suggests that changes are not limited to childhood



but continue across the entire lifespan, often triggered by critical life events such as parenthood or trauma;

- *contextual influence*, the idea that a person's development is shaped by the various environments and social settings he or she experiences.

However, contemporary developmental psychology adopts a synthetic view, recognising that both stability and change occur, often simultaneously. While certain traits, such as those related to temperament and general intellectual capacity, are relatively stable, the behavioural expression of these traits changes as individuals mature and learn new coping mechanisms. For example, a naturally shy child may remain an introvert but learns sophisticated social skills to manage professional situations.

1.1.3.3. Continuity *versus* Discontinuity

The continuity *versus* discontinuity issue addresses whether human development is a smooth, gradual, cumulative process or occurs in a series of distinct, qualitatively different stages.

The continuity viewpoint posits that development is a process of quantitative change, where new abilities build steadily upon previously acquired skills. Proponents argue that the difference between earlier and later developmental stages is only a matter of amount or complexity, not a difference in fundamental kind. For example, a child's reading fluency increases year by year, reflecting a continuous accumulation of skill rather than a sudden shift in how they process letters. This view often aligns with learning theories such as classical conditioning or operant conditioning, which emphasise a smooth, incremental progression in the behaviour being learned.

On the other hand, the discontinuity viewpoint holds that development involves qualitative change, characterised by a sequence of clearly defined stages, each organised by unique characteristics. Proponents argue that development involves abrupt, step-like transformations where thought and behaviour are fundamentally reorganised. For example, a child's fundamental shift from believing in an imaginative figure like Santa Claus to understanding the concept of an imaginative figure reflects a sudden, qualitative reorganisation in their capacity for reality testing and abstract thought. This perspective is central to stage theories like Piaget's cognitive stages, which propose a fixed, universal sequence.

Contemporary developmental psychology however, recognises that both perspectives hold explanatory power, depending on the domain being studied. Specifically, certain areas, referred to as *continuous domains*, such as memory capacity, vocabulary size, and aspects of social learning, often follow a smooth, incremental trajectory. Conversely, *discontinuous domains*, such as the emergence of abstract reasoning or the shift in moral judgment, often appear to occur in sudden, step-like reorganisations, supporting the stage view.

Table: 1.1.2. Issues in Human Development

<i>Issues</i>	<i>Description</i>
Nature <i>versus</i> Nurture	Is development primarily the product of genes, biology, and maturation, or of experience, learning, and social influences?
Stability <i>versus</i> Change	Do individuals maintain consistent traits and patterns over the lifespan, or do they change as they develop?
Continuity <i>versus</i> Discontinuity	Do humans change gradually and in quantitative ways, or do they progress through qualitatively different stages and change dramatically into different beings?

1.1.4. Developmental Research

Imagine two children in the same classroom. At age four, both struggled to read simple words. However, by age seven, one child reads fluently while the other still hesitates over basic sounds. If they are assessed at the age of seven, one might conclude that one child is ‘smarter’ or ‘more capable’ than the other. However, this conclusion obscures an entire developmental story. Perhaps one child had early exposure to books at home or received extra support in kindergarten, while the other faced health issues or inconsistent schooling.

This example underscores why understanding development requires more than one assessment. While some psychological aspects, such as personality characteristics or decision-making, can yield valuable information from a single measurement in a controlled setting, studying development is different.

Because development is best conceptualised as a pattern of change rather than an instant, researchers rely on specialised methodologies to track growth, compare age groups, and examine multiple birth cohorts. Of the many developmental research designs being employed, this section discusses three of them:

1. Longitudinal
2. Cross-sectional
3. Sequential

1.1.4.1. Longitudinal Research

Longitudinal research involves studying the same group of individuals, often of a specific age or background, over an extended period. Researchers track participants’ development by administering the same measures at different points in their lives,



sometimes spanning decades. Thus, this design allows researchers to examine patterns of stability and change within individuals. A classic example is the ongoing *Harvard Study of Adult Development*, which has tracked participants for decades to understand the factors that lead to a happy and healthy life.

Harvard Study of Adult Development

The Harvard Study of Adult Development is an ongoing landmark longitudinal study that began in 1938. It tracks the same individuals and their families, collecting detailed data, from brain scans to blood tests, on thousands of aspects of their lives. The study aims to discover what makes people flourish and experience well-being. Emerging findings from this research have revealed that while many factors contribute to a person's happiness, several themes emerge more strongly than others - a strong connection with others being one of them.

Follow the link to their website for more details: <https://www.adultdevelopmentstudy.org/>

Advantages:

- Provides detailed and valid data on individual development patterns, allowing researchers to examine the trajectory of stability or change within a person such as measuring, how an individual's intelligence score changes from age 5 to 50.
- Allows researchers to identify specific early factors (antecedents) that predict later developmental outcomes, such as linking early temperament traits to adult personality or career success.

Disadvantages:

- Since only one cohort is studied, results might only be applicable to that specific generation, limiting generalisability. For example, findings about today's 80-year-olds may not apply to the next generation, which grew up in a different technological era.
- It is time-consuming, expensive, and subject to participant dropout (attrition), potentially biasing the results.

1.1.4.2. Cross-Sectional Research

Cross-sectional research involves studying different age groups at a single point in time to infer developmental changes across ages. Rather than following individuals over years, researchers compare different age groups (or cohorts) to examine developmental differences.

A typical example of a cross-sectional study might include groups of 15-year-olds, 25-year-olds, and 45-year-olds compared with respect to a variety of dependent variables such as IQ, memory, hormonal influences, etc.

Advantages:

- It is quick and cost-effective, as data collection happens once rather than over years, and provides immediate data on age-related differences.
- Useful for identifying broad age-related trends and developmental differences between multiple age groups.

Disadvantages:

- Susceptible to cohort effects, where differences may reflect generational experiences rather than age. For example, the 70-year-old group may perform worse on a computer task than the 25-year-old group, possibly because of their limited earlier exposure to technology.
- Cannot track individual developmental changes over time, and, therefore, age-related differences identified through cross-sectional research must be interpreted cautiously, particularly in culturally and technologically diverse populations.

1.1.4.3. Sequential Research

Sequential research combines longitudinal and cross-sectional research by studying multiple cohorts of different ages over time to control for both age and cohort effects. This allows the researchers to track both individual changes and compare groups of different ages simultaneously. The classic example of this type of research is the *Seattle Longitudinal Study*, famed for being the most extensive cohort-sequential psychological study that examines cognitive and psychosocial change across multiple birth cohorts over the same chronological age span.

Seattle Longitudinal Study

The Seattle Longitudinal Study (SLS), initiated in 1956 by Dr K. Warner Schaie, is considered to be one of the most extensive psychological research on how adults develop and change throughout adulthood. The SLS is unique as a cohort-sequential longitudinal study, examining cognitive and psychosocial changes in multiple birth cohorts over the same chronological age span.

Follow the link for more details <https://sls.psychiatry.uw.edu/>

Advantages:

- It allows researchers to separate age-related changes from generational (cohort) effects, providing both longitudinal and cross-sectional insights.



- It retains the ability to track intra-individual change (longitudinal) while simultaneously providing more rapid results than a purely longitudinal study.

Disadvantages:

- It is complex and resource-intensive, requiring large-scale planning, sustained efforts, and substantial funding over extended periods.
- Analysing the data is statistically more complex, as researchers must account for age, cohort, and time of measurement in sophisticated models.

Recap

- ◆ Growth refers to physical changes, whereas development involves functional and qualitative changes across the lifespan.
- ◆ Growth is a quantitative, measurable increase in physical dimensions, whereas development is typically qualitative in nature.
- ◆ Growth is unidirectional and follows a predictable sequence, whereas development is multidirectional and can involve gains and losses.
- ◆ Growth is limited to early stages or until maturation, whereas development is lifelong, from conception to death.
- ◆ Growth is quantitative and biologically limited; development is typically qualitative and lifelong.
- ◆ Domains of development: physical, cognitive, and psychosocial
- ◆ The physical domain includes body growth, brain development, and motor skills.
- ◆ The cognitive domain includes reasoning, memory, language, and problem-solving.
- ◆ The psychosocial domain includes emotions, personality, and social relationships.
- ◆ Major debates and issues in developmental psychology include:
 - Nature vs. Nurture
 - Stability vs. Change

- Continuity vs. Discontinuity

- ◆ Nature vs. nurture questions the influence of genetics *versus* environment.
- ◆ Stability vs. change addresses the consistency of traits over the lifespan.
- ◆ Continuity vs. discontinuity addresses gradual change versus changes occurring in distinct stages.
- ◆ Longitudinal research studies the same participants over time.
- ◆ Cross-sectional research compares different age groups at one time.
- ◆ Sequential research combines longitudinal and cross-sectional methods.

Objective Questions

1. Which change is typically quantitative: growth or development?
2. Growth progressing from the head to the toe is called what?
3. Growth proceeding from the centre outwards is called what?
4. The brain's ability to change and adapt is known as what?
5. Changes in bone density belong to which domain?
6. Changes in problem-solving ability belong to which domain?
7. The development of attachment belongs to which domain?
8. Which domain includes both gross and fine motor skills?
9. Which standpoint examines the contribution of biological inheritance in the nature vs. nurture debate?
10. Which issue emphasises the role of family and culture in the nature vs. nurture debate?
11. Which viewpoint argues that personality traits persist into adulthood?
12. Which perspective in the stability vs. change debate highlights adaptability?



13. What is the standpoint that development is a smooth, gradual process?
14. What is the standpoint that considers development as occurring in distinct, step-like stages?
15. Which research design tracks the same individuals for decades?
16. Which research design compares different age groups at a single time point?
17. What is the main limitation of cross-sectional research?
18. Which design combines longitudinal and cross-sectional methods?
19. Which process involves the reorganisation of functioning, rather than just addition?
20. What is the term for participant dropout in longitudinal studies?

Answers

1. Growth
2. Cephalocaudal
3. Proximodistal
4. Plasticity
5. Physical
6. Cognitive
7. Psychosocial
8. Physical
9. Nature
10. Nurture
11. Stability
12. Change

13. Continuity
14. Discontinuity
15. Longitudinal
16. Cross-sectional
17. Cohort effect
18. Sequential
19. Development
20. Attrition

Assignments

1. Differentiate between growth and development, providing one example for each that illustrates their core difference.
2. Explain the characteristics of growth and describe how they operate across childhood.
3. Discuss the characteristics of development and illustrate multidimensionality with examples.
4. Critically analyse the major debates and issues in developmental psychology.
5. Compare longitudinal, cross-sectional, and sequential research designs.
6. Illustrate how physical, cognitive, and psychosocial development influence one another.



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Unit 2

Theories of Human Development

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ evaluate the genetic and evolutionary perspectives as biological theories on human development
- ◆ discuss psychodynamic theories on human development, focusing on the contributions of Freud, Klein, and Erikson
- ◆ compare and analyse the cognitive theories of Piaget and Vygotsky in explaining human development

Prerequisite

Why does a human being, beginning as a single fertilised cell, proceed to develop a complex brain capable of abstract thought, emotion, and morality? More interestingly, why do individuals following this exact blueprint turn out so vastly different?

Consider the following developmental paradoxes:

- You are fundamentally the same person who existed at age five (maintaining core identity and memories), yet you are entirely different (physically, cognitively, and emotionally) than you were then. What allows for this radical yet continuous transformation?
- An infant's brain has more neural connections than an adult's. Why does development involve both massive growth (learning to speak) and loss (neural pruning)? What determines which skills are learned and which connections are shed?



- Consider a child born into a war-torn region and another born into a wealthy, stable home. While their environments seem worlds apart, both will likely follow the same sequence of language development and physical milestones. Yet, their worldviews, stress responses, and values will diverge profoundly. Which force, biology or context, holds the greater power?

This unit is your guide to exploring these profound questions. Theories of human development comprise a collection of competing philosophical and scientific models that provide distinct frameworks for describing, explaining, and predicting the complex patterns of human change from conception to death.

Keywords

Heredity, Natural Selection, Unconscious, Psychosexual Stages of Development, Object Relations, Psychosocial Crisis, Epigenetic Principle of Maturation, Identity, Schemas, Equilibration, ZPD, Scaffolding

Discussion

Theories of human development can be broadly classified based on their focus on the forces that drive change (internal, external, or cognitive) and the pattern of that change (stages *versus* continuous).

1. Psychodynamic Theories

These theories emphasise the influence of internal, unconscious psychological forces, memories, and emotions on development. They primarily focus on the role of early childhood experiences in determining development pattern across the lifespan.

2. Cognitive Theories

Cognitive theories focus on mental processes such as thinking, reasoning, problem-solving, and knowledge construction. They explore how individuals acquire, process, and organise information at different stages of development and often propose that development occurs in qualitatively distinct stages (discontinuous).

3. Learning/Behavioural Theories

These theories highlight the role of the environment, learning, and observation in shaping behaviour. Development is seen as a process influenced by reinforcement, modelling, and experiential learning.

4. Ethological and Evolutionary Theories (Biological)

These theories examine the biological basis of behaviour and development, focusing on how genetically inherited patterns have evolved to enhance survival. They emphasise the role of biology, adaptation, and critical periods in development.

5. Ecological and System Theories (Contextual)

Ecological and systems approaches emphasise the essential role of the social, cultural, and historical environment in shaping development, focusing on the interaction of multiple environmental systems in influencing development. They view the individual as inseparable from their context.

1.2.1. Biological Theories

Biological theories of development focus on internal, physiological forces as the principal determinants of growth, encompassing both the immediate impact of genetics and the long-term influence of evolutionary history. These perspectives fundamentally emphasise that developmental patterns are rooted in the body's inherited structures and biological processes.

1.2.1.1. Genetic Perspective

The genetic perspective emphasises the foundational role of heredity in shaping developmental patterns. According to this perspective, human development unfolds within the limits set by the genetic material inherited from one's parents.

The central tenet of the genetic perspective is that development is guided by a biological blueprint encoded in genes, which directs growth, maturation, and behavioural predispositions. While environmental factors modulate how traits are expressed, the underlying potential, timing, and progression of development originate from inherited genetic structures.

Gene-Environment Interaction

The genetic perspective, however, acknowledges that genes interact with environmental contexts to shape development. This includes:

- i. gene-environment interactions*, where genetic predispositions make individuals more or less sensitive to particular environments. For example, a child genetically prone to anxiety may be more affected by a stressful home environment.
- ii. gene-environment correlations*, where genetic tendencies influence the types of environments one seeks or creates. For example, an outgoing child may actively seek social activities.



Strengths:

- Provides a rigorous, scientific basis for understanding individual differences.
- Supported by strong empirical evidence from twin and adoption studies, alongside analyses of specific genetic markers, which confirm a heritable influence on diverse developmental outcomes.
- Offers a deep understanding of the underlying biological mechanisms of complex traits or disorders such as schizophrenia, paving the way for targeted research.

Limitations:

- Overemphasising genetic factors risks promoting biological determinism, thereby minimising the crucial roles of environment, learning, and individual agency in development.
- The polygenic nature of complex traits, such as intelligence and personality, poses significant challenges in linking specific genes to their development.
- This perspective offers a limited explanation for the profound impact of cultural, socioeconomic, and experiential variations on developmental pathways.

1.2.1.2. Evolutionary Perspective

The evolutionary perspective explains human development by tracing how certain traits, behaviours, and capacities evolved because they enhanced survival and reproductive success across generations. Rooted in Darwinian principles of natural selection, this perspective suggests that many aspects of development reflect adaptive solutions to challenges faced by our ancestors. For instance, infants' strong tendency to maintain proximity to caregivers, as evident in crying, clinging, or seeking comfort, can be understood as an evolved behaviour that historically increased the child's chances of protection from predators and environmental threats.

The central proposition of the evolutionary perspective is that humans inherit not only physical characteristics but also behavioural tendencies shaped by evolutionary pressures. These predispositions, such as attachment behaviours, emotional responses, social tendencies, or cognitive biases, develop because they once contributed to survival, protection, or efficient functioning in ancestral environments. Development, therefore, is understood as progressing along pathways that have been naturally selected to optimise adaptation.

The evolutionary perspective of human development is closely connected to ethological approaches, which emphasise the biological basis of behaviour and the importance of sensitive periods. Ethologists such as Konrad Lorenz and John Bowlby demonstrated how certain universal behaviours, such as imprinting in animals and attachment in humans, reflect evolved mechanisms that ensure safety, bonding, and caregiving.

Strengths:

- Provides a comprehensive framework for understanding why certain developmental patterns are universal across cultures, such as infants' consistent tendency to form attachments to caregivers.
- Connects biological, behavioural, and ecological aspects of development, offering integrative explanations for human social and cognitive tendencies. For instance, children's natural curiosity and exploratory play can be viewed as behaviours that helped ancestral humans learn about their environment and avoid danger.

Limitations:

- Evolutionary explanations can sometimes be speculative, as it is difficult to empirically verify the precise ancestral functions of behaviours.
- It tends to focus mainly on genetic and adaptive explanations, sometimes neglecting non-genetic, cultural, or environmental factors that also contribute significantly to human development.

1.2.2. Psychodynamic Theories

Psychodynamic theories emphasise the role of unconscious processes, early experiences, and psychological conflicts as central forces guiding development. These perspectives view development as guided by deep-seated motives, emotional struggles, and formative relationships, particularly those established during childhood.

This section briefly discusses the theories proposed by Freud, Melanie Klein, and Erikson.

1.2.2.1. Psychoanalytic Perspective

Sigmund Freud's psychoanalytic theory is one of the most foundational, yet controversial, perspectives in the history of psychology. He was one of the first to emphasise the unique developmental history of each child. Freud offered a comprehensive, stage-based view of how personality and behaviour develop, driven largely by unconscious processes and early childhood experiences.

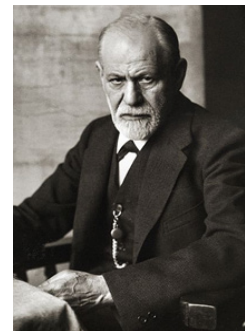


Fig.1.2.1. Sigmund Freud

Central Tenets:

- **Primacy of the unconscious**

Human behaviour and development are strongly influenced by unconscious desires, fears, and conflicts that originate early in life, such as an unexplained fear or anxiety.

- **Instinctual drives as the motivating force**

Development is propelled by innate biological drives, particularly sexual (libidinal) and aggressive impulses, which seek expression and satisfaction throughout one's lifespan.

- **Structural model of personality**

The id (instinctual), ego (rational), and superego (moral) develop in interaction with

one another, and development entails the progressive differentiation and integration of these components, such as when a child resists taking a toy because the internalised ‘should not’ overrides impulse.

- **Psychosexual stages of development**

Children progress through five stages, such as oral, anal, phallic, latency, and genital, each defined by the focus of libido on different bodily zones. Conflicts at each stage must be negotiated for healthy development.

- **Defence mechanisms as regulatory processes**

To manage intrapsychic conflict and anxiety, the ego employs defence mechanisms such as repression, denial, projection, and rationalisation. These operate largely unconsciously and serve as essential regulatory processes in development, although overreliance may impede adaptive functioning.

Table 1.2.1. Psychosexual Stages of Development

Stage	Focus of Libido	Features	Fixation
Oral (0-18 months)	Mouth	Pleasure from oral activities such as sucking and biting; dependency on the caregiver	Oral fixation (e.g., overeating, smoking, nail-biting, dependency)
Anal (1.5-3 years)	Anus	Pleasure from control over elimination; conflict over toilet training	Anal-retentive (overly neat, rigid) or anal-expulsive (messy, rebellious) personality
Phallic (3-6 years)	Genitals	Oedipus/ Electra complex; identification with same-sex parent	Problems with authority, sexual identity, or relationships, if conflict unresolved
Latency (6-11 years)	Dormant	Focus on social, intellectual, and skill development; sexual impulses repressed	Generally, a period of relative stability; inadequate social or academic development if conflicts arise
Genital (11 years and above)	Genitals	Development of adult relationships; balance of love, work, and social life	Difficulty forming healthy adult relationships; unresolved earlier conflicts influence personality

Strengths:

- Provides a coherent developmental narrative, linking how experiences in childhood, such as fixations in the oral stage, can lead to adult habits like smoking or overeating.
- Emphasises the lasting impact of early childhood experiences and the parent-child relationship on adult personality and psychological adjustment.
- Inspired neo-psychoanalytic and psychosocial approaches, such as Klein's and Erikson's, broadening the field of developmental psychology.

Limitations:

- Lack of empirical support and testability of many concepts, such as the id, the ego, and the superego, as well as the specifics of the psychosexual stages.
- Retrospective and non-predictive, as the theory was constructed mainly based on the retrospective accounts of adult patients in therapy, limiting its generalisability and ability to predict future behaviour.
- The theory's reliance on an early 20th-century Western context makes it difficult to generalise its findings to non-Western or collectivistic societies.
- Limited by its deterministic nature, the theory neglects the crucial influence of culture, socialisation practices, and cognitive processes on development.

1.2.2.2. Object Relations Theory

The object relations theory proposed by Melanie Klein conceptualises human development as a process shaped primarily by the infant's internal emotional world and early relational experiences, particularly the way the infant internalises and interprets interactions with primary caregivers. The theory fundamentally shifts the focus of development from Freud's emphasis on biological drives and psychosexual stages to the innate human need for relationships and connection.



Fig.1.2.2. Melanie Klein

Central Tenets:

- ***Internal objects***

Infants form internalised mental representations of the mother or primary caregivers (the 'objects'), such as holding an inner image of the mother or primary caregiver as comforting.

- ***The Two Positions***

Development involves oscillation between these two psychic positions.

- i. The paranoid-schizoid position.
- ii. Depressive position.



These are enduring modes of managing internal and external objects that persist into adulthood.

i. Paranoid-Schizoid Position

The goal is to keep 'all-good' objects safe from the infant's own destructive impulses and from the persecuting 'bad' objects. It involves,

- *Splitting*: The infant manages overwhelming anxiety by mentally splitting objects into 'all-good' and 'all-bad' part-objects. For example, a mother's breast may be seen as good when nourishing and bad when absent or frustrating. This separation protects the ideal, 'good object' from the infant's own innate destructive feelings.
- *Defence mechanisms*: The infant uses primitive defences like projection (attributing their bad feelings, especially aggression, onto the 'bad object') and introjection (taking the 'good object' into the self).
- *Persecutory anxiety*: the fear that the 'bad objects' (now seen as outside threats) will attack or destroy the self.

ii. Depressive Position

Emerges as the infant develops the capacity to see the object as a whole (*integration*), recognising that the 'good' and 'bad' breast belong to the same person (the mother). This integration is seen as a crucial step toward mature human relationships.

This position is dominated by

- *Depressive anxiety*: The fear and guilt over their own aggressive *phantasies* that they feel have damaged the now-loved whole mother.
- *Empathy and reparation*: The infant develops the capacity for empathy and reparation (the desire to make amends for the harm done in phantasy).
- **Phantasy**

Klein believed infants possess innate, unconscious *phantasies* (spelled with a 'ph' to distinguish them from conscious fantasies) from birth, which are primitive psychological representations of drives and instincts that inform how they experience their earliest relationships.

- **Focus on relationship**

Klein moved emphasis away from biological drives (as in classical Freudian theory) towards the importance of interpersonal relationships as the primary influence in development and behaviour. The need for human contact, rather than sexual pleasure, drives psychological growth and conflict resolution.

Strengths:

- Advanced an understanding of the infant's internal world, particularly the unconscious and internal objects, offering a nuanced picture of the early mental life and the emotional complexity involved.
- Laid the foundation for the entire 'Object Relations School' of psychoanalysis,

which profoundly influenced subsequent developmental theorists like Winnicott and Wilfred Bion.

- By framing development as an oscillation between the paranoid-schizoid and depressive positions, Klein's model explains enduring patterns of anxiety, defence, and relationship dynamics that persist into adulthood, thus linking early experiences with later psychopathology and normal functioning.
- Pioneered the use of play therapy as a means of accessing and interpreting the unconscious inner world of very young children.

Limitations:

- The ideas about unconscious *phantasies*, internal objects, and positions are abstract and can be challenging to operationalise or empirically validate, limiting direct scientific testing.
- Some critics argue that Klein's focus on early anxieties and defence mechanisms might overemphasise pathological processes in normal development, potentially neglecting positive, adaptive aspects of development.
- The theory centres heavily on internal psychic life and less on environmental, social, and cultural influences, which modern developmental psychology often emphasises.

1.2.2.3. Psychosocial Theory

Erik Erikson's psychosocial theory of human development, organised around eight sequential stages from infancy to late adulthood, emphasises the interaction of biological, psychological, and social factors in shaping personality and identity throughout life. At each stage, individuals face a core psychosocial crisis or conflict that serves as a turning point in development. The successful resolution of these conflicts leads to the acquisition of vital virtues and a healthy personality. In contrast, maladaptation (an unfavourable resolution) can result in difficulties and affect subsequent stages of development.

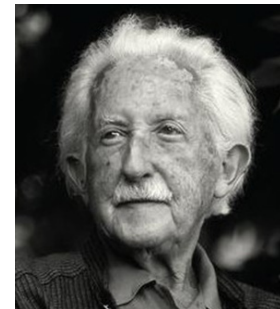


Fig.1.2.3. Erik Erikson

Erikson, a neo-Freudian, retained the stage-based structure but shifted the primary emphasis from Freud's biological (sexual) drives to social and cultural influences on the development of the ego (sense of self).

Central Tenets:

- ***Psychosocial crisis***

Each of the eight stages is defined by a major crisis or conflict (e.g., Trust vs. Mistrust) that arises from the interaction between the individual's psychological needs and the demands of society.

- ***Epigenetic Principle of Maturation***

The stages follow a universal, predetermined order. The successful resolution of the conflict at one stage is necessary for navigating the next, much like how organs develop



in a fixed sequence.

- ***Lifespan Development***

Unlike Freud, Erikson proposed that development is not fixed in childhood but continues throughout the entire lifespan, from infancy to old age, with different tasks being primary at varying points in life.

- ***Ego Virtue***

Successful resolution of a crisis means finding a healthy balance between the two opposing forces, leading to the acquisition of a fundamental basic strength or virtue (e.g., Hope, Will, Fidelity).

- ***Dynamic tension***

Development involves a continuous balancing act between individual needs, desires, and identity formation and the expectations, demands, and norms of society.

Table 1.2.2. Psychosocial Stages of Development

Stage	Basic Conflict	Virtue
Infancy (0-1 year)	Trust vs Mistrust	Hope
Toddlers (1-3 years)	Autonomy vs. Shame/Doubt	Will
Preschoolers (3-6 years)	Initiative vs. Guilt	Purpose
School Age (6-12 years)	Industry vs. Inferiority	Competence
Adolescents (12-18 years)	Identity vs. Role Confusion	Fidelity
Young Adults (18-40 years)	Intimacy vs. Isolation	Love
Middle Adulthood (40-65 years)	Generativity vs. Stagnation	Care
Late Adulthood (65 yearsonward)	Integrity vs. Despair	Wisdom

Strengths:

- One of the first and most significant theories to conceptualise human development

as a process that continues across the entire lifespan.

- Highlights the crucial role of social interaction, culture, and societal expectations in personality and identity formation.
- Emphasis on identity development, especially in adolescence, has been influential, relevant, and has provided an enduring framework for understanding human development.

Limitations:

- Often criticised for insufficient scientific validation and vague mechanisms for how crises are resolved and development progresses between stages.
- Reflects a western, male-centric approach that the specific nature and timing of the crises may not apply universally across all cultures.
- Tends to underplay individual temperament, cognitive diversity, and the impact of trauma on development.

1.2.4. Cognitive Theories

Cognitive theories centre on how individuals acquire, organise, and use knowledge, focusing on the processes of thinking, reasoning, and problem-solving. These perspectives conceptualise development as an active process through which individuals construct knowledge and acquire increasingly complex ways of representing and interpreting the world. This section briefly discusses the theories proposed by Jean Piaget and Lev Vygotsky.

1.2.4.1. Theory of Cognitive Development

Jean Piaget's Theory of Cognitive Development posits that children actively construct knowledge through a series of developmental stages, each characterised by qualitatively different ways of thinking. His theory conceptualises development as a progressive reorganisation of mental processes through four distinct, universal stages influenced by biological maturation and interaction with the environment.



Fig.1.2.4. Jean Piaget

Central Tenets:

- ***Invariant Sequence of Stages:***

Cognitive development occurs through four universal, fixed stages: sensorimotor, preoperational, concrete operational, and formal operational, each marked by distinct ways of thinking.

- Sensorimotor stage:* Infants learn about the world entirely through their senses and motor activities (actions). The significant achievement is object permanence,

the understanding that objects continue to exist even when out of sight.

- ii. *Pre-operational stage*: Children develop symbolic thought (using words and images to represent objects). Key features include egocentrism (difficulty seeing the world from another's perspective) and centration (focusing on only one aspect of a situation).
- iii. *Concrete operational stage*: Children begin to think logically about concrete events and objects. They master the concept of conservation (understanding that quantity remains the same despite changes in appearance).
- iv. *Formal operational stage*: Children develop the ability to think abstractly, reason logically, and use hypothetical-deductive reasoning.

- ***Schema as basic units***

Mental frameworks or cognitive structures called schemas help individuals organise and interpret information. Schemas become more complex and numerous as children interact with the world.

- ***Adaptation through assimilation and accommodation***

Adaptation is the process by which children adjust their cognitive processes to better understand and interact with the world, and this happens through two complementary mechanisms;

- *Assimilation*: Incorporating new experiences into existing schemas without fundamentally changing the schema (e.g., a child calls all four-legged animals a 'dog').
- *Accommodation*: Modifying an existing schema or creating a new one to fit new, discrepant information (e.g., the child learns to differentiate between a dog and a cat, creating a new 'cat' schema).

- ***Equilibration***

This is the force that moves development forward. It is the drive to maintain a balance between assimilation and accommodation. When new information creates a cognitive conflict (disequilibrium), the child is motivated to resolve it, leading to accommodation and a higher level of thinking.

Table 1.2.3. Stages of Cognitive Development

Stage	Characteristics	Key Processes	Examples
Sensorimotor (0-2 years)	Knowledge through sensory experiences and motor actions	Object permanence, cause-and-effect learning	Infant learns that objects continue to exist when out of sight; shaking a rattle produces sound

Preoperational (2-7 years)	Symbolic thinking, imagination, and egocentrism	Language development, pretend play, centration	Child uses words and images to represent objects; struggles to see others' perspectives
Concrete Operational (7-11 years)	Logical thinking about concrete events	Conservation, classification, seriation	Child understands quantity stays the same despite changes in shape; can sort objects by size or colour
Formal Operational (12 years and above)	Abstract and hypothetical thinking	Hypothetical- deductive reasoning, problem-solving	Adolescents can reason about abstract concepts like justice, ethics, and hypothetical situations

Strengths:

- Piaget provided a coherent framework that highlighted qualitative differences in how children develop cognitive abilities, transforming the field by demonstrating that children are not just 'mini-adults' but think in fundamentally different ways.
- The theory's emphasis on children as active, self-motivated learners who construct knowledge has profoundly influenced educational practices, promoting discovery learning and hands-on activities.
- It shifted the focus of psychology from a narrow behaviourist emphasis on observable responses to a broader appreciation of internal cognitive processes and their developmental changes.

Limitations:

- Modern research using more sensitive methods has shown that many cognitive competencies (like., object permanence, perspective taking) appear earlier than Piaget proposed, especially when the tasks are simplified.
- The invariant stage model is often considered too rigid; development in many domains appears more continuous, uneven across tasks, and domain-specific rather than globally stage-like.
- The theory tends to downplay the role of language, guided participation, and sociocultural context (as highlighted later by Vygotsky and others) in shaping cognitive development.
- It offers limited treatment of individual differences, neurodiversity, and the impact of atypical development, making the theory less adequate for explaining variability in cognitive trajectories. For example, Piaget's theory does not adequately account for children with neurodevelopmental disorders such as autism, whose cognitive



development may follow atypical patterns that do not fit neatly into the established stage model.

1.2.4.2. Sociocultural Theory of Development

Lev Vygotsky's sociocultural theory of cognitive development emphasises the fundamental role of social interaction, culture, and language in shaping a child's cognitive growth. Vygotsky viewed development as continuous (unlike stage models) and as a socially mediated process in which learning plays a leading role in development.



Fig.1.2.5. Lev Vygotsky

Central Tenets:

- ***Learning precedes development***

Vygotsky argued that instruction plays a key role in driving development by introducing children to culturally valued knowledge and practices ahead of independent mastery.

- ***Sociocultural mediation and internalisation***

Cognitive development occurs through social interactions with caregivers, teachers, and peers, who provide guidance and cultural tools that support learning. Through social dialogue, external knowledge is gradually internalised, transforming social interactions into independent mental functions.

- ***The role of language***

Language structures thought and enable higher mental processes. Children's private speech gradually becomes internalised as inner speech and functions as a mediator of cognitive processes and self-regulation.

- ***Zone of Proximal Development (ZPD)***

Defines the gap between what a child can do independently and what they can achieve with guidance. Learning is most effective when it targets this zone and leads directly to development.

- ***More Knowledgeable Other (MKO)***

Refers to anyone (parent, teacher, peer, or even a digital tool or computer programme) with greater skill or understanding who helps the learner advance cognitive abilities through *scaffolding*, temporary support adjusted to the child's needs.

Strengths:

- Provides a crucial counterpoint to Piaget by emphasising the profound, inseparable role of culture and social experience in shaping cognition, accounting for diversity in development.
- The concepts of ZPD and scaffolding have been highly influential, forming the basis for modern educational practices that focus on guided learning, cooperative tasks, and individualised instruction.

- Unlike the stage theories, Vygotsky provides an open framework that accommodates individual differences, cultural diversity, and varied learning trajectories.

Limitations:

- Vague operational definitions of some concepts, like the exact boundaries of the ZPD, can complicate empirical testing.
- The theory is criticised for understating the role of biological and maturation factors (like those emphasised by Piaget) in driving development, focusing almost exclusively on social interaction.
- The theory highlights cultural and interpersonal influences more than children's self-initiated discovery, which some critics argue is essential to cognitive growth.

Recap

- ◆ Biological theories emphasise heredity, genetic structures, and evolutionary influences.
- ◆ Genes act as a biological blueprint determining growth and maturation.
- ◆ Twin and adoption studies provide strong evidence for the hereditary influence on development.
- ◆ Evolutionary theories connect biology, behaviour, and ecology, explaining development as adaptation shaped by natural selection.
- ◆ Psychodynamic theories highlight unconscious processes and early experiences.
- ◆ Freud proposed that behaviour is driven by instinctual drives and unresolved conflicts.
- ◆ Development progresses through psychosexual stages governed by libido.
- ◆ Object Relations Theory conceptualises human development as a process shaped by the infant's internal emotional world and early relational experiences.
- ◆ Internal objects are the internalised mental representations of primarily mothers or caregivers by the child.
- ◆ According to Klein's theory, development involves oscillating between two positions:
 - Paranoid-schizoid
 - Depressive



- ◆ Erikson proposed eight psychosocial stages spanning the lifespan, dictated by the epigenetic principle of maturation.
- ◆ Each Eriksonian stage presents a psychosocial crisis to be resolved, and the successful resolution yields a basic strength.
- ◆ Piaget viewed children as active knowledge constructors and proposed that cognitive development progresses through four universal stages.
- ◆ According to Piaget, schemas develop through the processes of assimilation and accommodation, and equilibration is the force that moves development forward.
- ◆ Vygotsky emphasised culture, language, and social interaction in development, and posited that learning precedes development through the ZPD and scaffolding.

Objective Questions

1. Who proposed the psychoanalytic theory of development?
2. Which theory explains development through natural selection and adaptation?
3. According to psychoanalytic theory what mechanism protects the ego from conflict?
4. Which perspective highlights internal mental representations of caregivers?
5. What is the earliest Freudian stage of psychosexual development?
6. What term refers to the ability to see objects as continuing to exist when out of sight?
7. Which stage in Erikson's theory occurs first?
8. Who proposed the theory of cognitive development?
9. What term refers to altering existing schemas to fit new information?
10. What is the central concept defining the gap between independent ability and assisted performance?
11. What term refers to someone who provides guidance in Vygotsky's theory?

12. What universal force drives the balance between assimilation and accommodation?
13. What term describes innate, unconscious representations in Klein's theory?
14. What type of development did Erikson emphasise across the lifespan?
15. Which cognitive stage involves abstract reasoning?
16. What mechanism incorporates new experiences into existing schemas?
17. What cultural tool is central to Vygotsky's view of cognitive growth?
18. Which principle dictates the predetermined sequence of psychosocial stages?
19. Which theorist expanded development to cover the entire lifespan as opposed to Freud?
20. What is the term for the optimal learning space described by Vygotsky?

Answers

1. Sigmund Freud
2. Evolutionary theory
3. Defence mechanisms
4. Object relations
5. Oral stage
6. Object permanence
7. Trust vs. Mistrust
8. Jean Piaget
9. Accommodation
10. Zone of Proximal Development



11. More Knowledgeable Other
12. Equilibration
13. Internal objects
14. Psychosocial development
15. Formal operational
16. Assimilation
17. Language
18. Epigenetic Principle of Maturation
19. Erik Erikson
20. Zone of Proximal Development (ZPD)

Assignments

1. Explain the key principles of the biological theories of development and evaluate their strengths and limitations.
2. Explain Freud's structural model of personality (Id, Ego, Superego). How does the development and interaction of these three structures explain a child's increasing ability to manage instinctual impulses?
3. Detail the two key psychic positions (Paranoid-Schizoid and Depressive) in Melanie Klein's Object Relations Theory. How does the shift from the first position to the second represent a fundamental step toward mature relationships?
4. Describe Erik Erikson's Epigenetic Principle of Maturation. Choose any two of Erikson's eight stages and discuss the psychosocial crisis and the corresponding virtue developed through its successful resolution.
5. Explain how Piaget used the concepts of assimilation and accommodation to explain how a child's schemas change and develop. Provide a unique example of each concept in action.
6. Discuss the crucial role of social interaction and language in shaping cognitive development, according to Vygotsky. How does this view

differ fundamentally from Piaget's emphasis on individual exploration?

7. Choose two theories (e.g., Freud and Erikson, or Piaget and Vygotsky) and compare their views on: a) the primary driver of development (e.g., instinctual drives *versus* social interaction), and b) whether development is best understood as continuous or discontinuous (stage-based).

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**BLOCK
2**

**Prenatal
Development and
Infancy**

Unit 1

Prenatal and Neonatal Development

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ♦ explain the stages of prenatal development
- ♦ identify and evaluate prenatal diagnostic tests
- ♦ examine the impact of environmental, genetic, and chromosomal factors on prenatal development
- ♦ discuss the key indicators of neonatal health and responsiveness

Prerequisite

Before we turn to the later phases of human life, let us pause at the beginning, the earliest stage, when a human being exists only as a cluster of multiplying cells, not yet capable of thought, memory, or intention. Development does not wait for birth; it begins long before. Within a matter of days, what started as a single cell organises itself into layers that will later become bones, organs, limbs, and the nervous system. Within weeks, the heartbeat appears, and by the third month, the foetus can move, respond, and begin forming the basic frame that will support all future learning and behaviour.

Think for a moment about the complexity of this period: how does a developing organism ‘know’ when to form a spine, when to organise neurons, or when to begin refining sensory systems? And how is it that this intricate process can be shaped, sometimes strengthened, sometimes disrupted, by factors in the mother’s body and environment? Nutritional levels, infections, maternal stress, pollutants, and genetic variations can influence the course of development in lasting, sometimes irreversible ways.



Yet prenatal development is not only about vulnerability; it is also about remarkable resilience. Even before birth, the foetus can adapt to patterns of sound, movements, and rhythms from the outside world, hinting at the continuity between prenatal life and later behaviour. This continuity becomes clearer at birth, when the newborn, often thought of as fragile and helpless, reveals organised reflexes, coordinated perceptual capacities, and a surprising readiness to engage with the world.

As you prepare to enter this unit, consider that every developmental achievement you will later learn, such as language, social bonding, reasoning, or identity, rests upon foundations laid long before the infant even opens its eyes for the first time. Understanding these origins offers not only biological insight but also a clearer psychological understanding of how early biological processes constrain and enable later development.

Keywords

Zygote, Blastocyst, Organogenesis, Teratogen, Drugs, Nutrition, Ultrasound, Amniocentesis, Chromosomal Disorders, Apgar Score, Reflexes

Discussion

2.1.1. Stages of Prenatal Development

Prenatal development refers to the period of human growth from conception to birth, a span of roughly 40 weeks during which a single fertilised cell transforms into a fully formed infant. Although this period occurs entirely within the womb, it is one of the most dynamic phases of human development. Every major structure, organ system, sensory capacity, and early behavioural pattern begins forming during this time. Because these weeks lay the biological foundation for all later physical, cognitive, and socio-emotional capacities, prenatal development is often described as a period of both remarkable possibility and significant vulnerability.

To understand this period clearly, developmental scientists divide it into three major stages or periods, each marked by distinctive patterns of organisation, growth, and risk, as:

- a. Germinal
- b. Embryonic
- c. Foetal

2.1.1.1. Germinal Period

The germinal stage spans from conception to about two weeks. It begins with fertilisation, forming a zygote containing the full genetic material of a new human being. In 24 to 36 hours after fertilisation, the single-celled zygote begins to divide. Over the next few days, the zygote divides through mitosis and becomes a *morula* (a mass of 16 cells), which travels down the fallopian tube to the uterus. In around 4 to 5 days, this cluster of cells reorganises into a hollow ball called a *blastocyst* (a mass of 150 cells). This blastocyst contains two layers:

- an inner cell mass, which will later develop into the embryo
- an outer layer, which will form the protective structures such as the placenta, amniotic sac, and fluid.

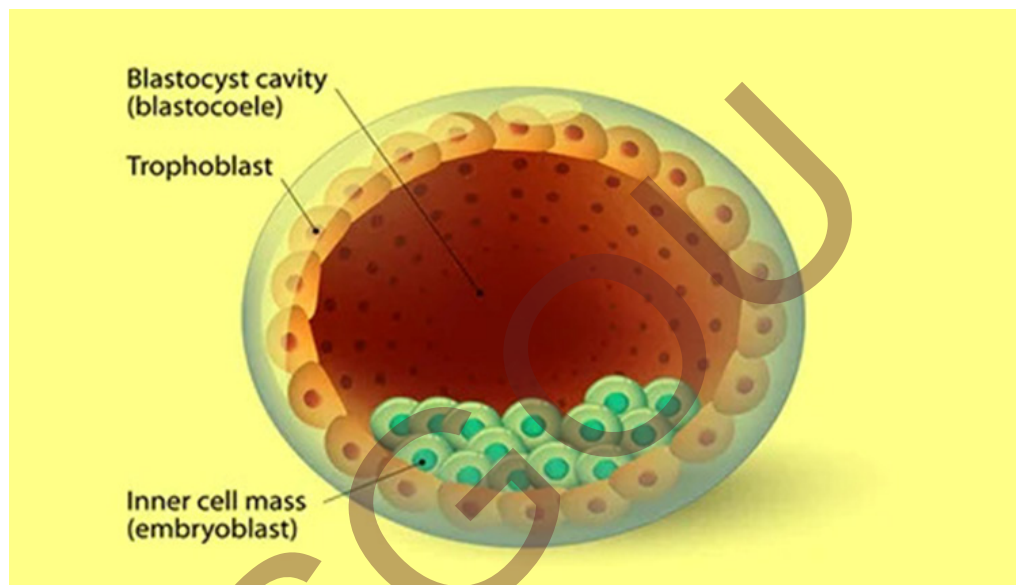


Fig.2.1.1. Blastocyst

Around one week after conception, the blastocyst implants into the uterine wall. In another week, the blastocyst embeds itself in the uterine lining, burrowing in and becoming dependent on the mother for nutrition. Only after successful implantation can the developing organism receive nutrients and continue to grow. Because many fertilised eggs fail to implant successfully, this period is considered biologically vulnerable despite its brief duration.

2.1.1.2. Embryonic Period

Once implanted, the developing organism is called an embryo, and the development accelerates dramatically. The embryonic stage lasts from about week three to week eight, and is a period of major structural formation. It is during this stage that the major organs and basic body structures, such as the heart, neural tube, and limbs, begin to form.

This stage, therefore, represents a critical period of cell differentiation where the embryo's cells develop into three distinct layers:

- *ectoderm* (which will form the skin, nails, teeth, ears and eyes, and the nervous system)
- *mesoderm* (which will form the muscles, bones, cardiovascular system, and other organ systems)
- *endoderm* (which will develop into the lungs, digestive, respiratory, and urinary systems, and the glands)

Development progresses from the head downward. Therefore, the head, face, and brain start developing before the body; arms begin to develop before legs. Eight weeks after conception (the time when most mothers first realise that they are pregnant), the embryo becomes recognisable as human.

Because *organogenesis* (the process by which the three germ layers of an embryo develop into the body's organs) is underway, this is the period of greatest vulnerability to environmental risks, such as infections, maternal illness, toxins, and nutritional deficiencies. Harm at this stage can produce structural abnormalities or arrest development altogether.

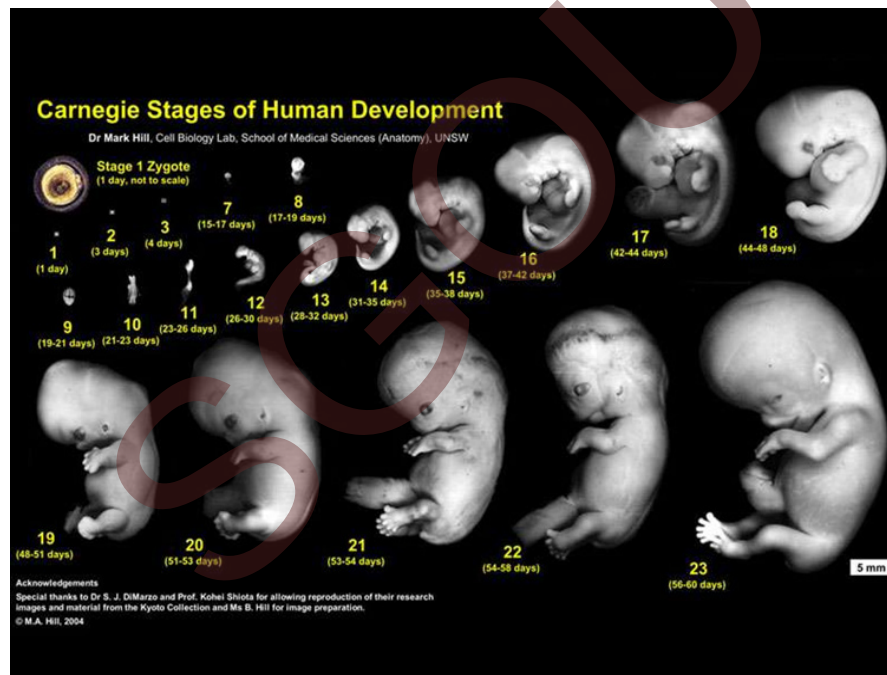


Fig.2.1.2. Carnegie Stages of Embryonic Development

A standardised classification of early human development into 23 sequential stages based on distinct morphological features, from fertilisation to the end of the eighth week.

2.1.1.3. Foetal Period

The foetal period is the longest phase of prenatal development, lasting from around the ninth week after conception until birth. The developing organism is referred to as the foetus, and this period focuses on growth, refinement, and functional maturation.

Key developments include:

- rapid increase in size and weight, especially in the third trimester,
- maturation of organ systems, enabling independent life after birth,
- sensory development, with the foetus responding to external stimuli such as sound and movement,
- increasing motor activity, including kicking, turning, and later, rhythmic breathing-like movements.

By around 22 to 24 weeks of gestation, many foetuses reach the *age of viability*, when survival outside the uterus becomes possible with intensive medical support, provided the brain and respiratory systems have reached sufficient functional maturity, though they remain at considerable risk. By the end of the foetal period (around 36 to 40 weeks), the foetus is considered full-term and is ready for birth, with all essential systems developed to function independently.

Stem Cells

The inner mass of the blastocyst implanted in the uterus is what develops into the embryo. At this stage, the cells composing this inner mass, which will become the embryo, are stem cells, identical and undifferentiated. Each of these cells has the potential to differentiate into any cell type of the body. As development progresses and cell division continues, cells gradually specialise, differentiating into various types of cells that eventually form the various structures and systems of the body. This developmental potential makes embryonic stem cells particularly valuable in biomedical research, especially for medical research aimed at repairing or regenerating damaged tissues or organs.

2.1.2. Prenatal Testing

Advances in medical science have enabled the observation, monitoring, and evaluation of the developing foetus long before birth. Prenatal diagnostic tests play a crucial role in assessing foetal health, identifying potential genetic or chromosomal abnormalities, detecting structural anomalies, and monitoring the overall progress of pregnancy. These tests help parents and healthcare professionals make informed decisions, plan early interventions when possible, and ensure safer prenatal care.

Prenatal tests can be broadly classified into two types:

1. Screening Tests
2. Diagnostic Tests



Screening tests are non-invasive methods that estimate the likelihood of a foetus having a specific genetic condition or birth defects. In contrast, *diagnostic tests* are usually invasive but provide definitive confirmation of genetic or structural abnormalities.

The section, however, discusses only the commonly used prenatal diagnostic tests.

2.1.2.1. Ultrasound Sonography

Ultrasound sonography in prenatal testing is a non-invasive imaging technique that uses high-frequency sound waves to generate real-time images of the developing foetus inside the uterus. It is often conducted seven weeks into pregnancy and at various times later on. It is used throughout pregnancy to confirm and date the pregnancy, monitor foetal growth, position, and movement, detect multiple pregnancies, and identify specific structural abnormalities such as microcephaly. Its primary advantage is that it is a safe, non-invasive, and painless method for continuous prenatal monitoring. It can also be used to guide invasive procedures such as amniocentesis by providing visualisation. However, its core limitation is that it cannot detect all foetal abnormalities and may sometimes require additional tests to confirm findings.

2.1.2.2. Maternal Blood Screening

Maternal blood screening is a prenatal test that analyses the specific substances in the mother's blood that directly reflect foetal development to assess the risk of the foetus having certain birth defects, such as Down Syndrome, Edwards' syndrome, or neural tube defects. It may be performed in the first trimester, combined with an ultrasound, or during the second trimester as a separate blood test. The test measures specific proteins and hormones such as Alpha-Fetoprotein (AFP) and Human Chorionic Gonadotropin (hCG) in maternal blood and combines these results with maternal age to estimate risk.

Its core strength lies in being a non-invasive, relatively simple, and early screening method for identifying pregnancies at higher risk. However, it only indicates risk and is not diagnostic, so abnormal results require follow-up with more definitive diagnostic tests. Common maternal blood screening tests include the triple/quadruple marker test (which measures AFP, hCG, estriol, and inhibin A to screen for Down syndrome and other conditions) and Non-Invasive Prenatal Testing (NIPT), which analyses the foetal DNA fragments present in the mother's blood to screen for chromosomal abnormalities with high accuracy.

2.1.2.3. Amniocentesis

Amniocentesis is a prenatal diagnostic procedure in which a small sample of amniotic fluid is withdrawn from the sac surrounding the foetus using a thin needle guided by ultrasound. It is typically performed between 15 and 20 weeks of pregnancy to detect genetic disorders, chromosomal abnormalities such as Down Syndrome, and neural tube defects, or to assess the foetal lung maturity. This test provides definitive diagnostic information about the foetus. However, it carries a small risk of complications such as miscarriage or infection due to the invasive nature of the procedure.

2.1.2.4. Chorionic Villus Sampling (CVS)

Chorionic Villus Sampling (CVS) is an invasive prenatal diagnostic test performed between 10 and 13 weeks of pregnancy to detect chromosomal and genetic abnormalities in the foetus. The procedure involves taking a small sample of placental tissue (chorionic villi) either through the abdomen using a needle or through the cervix using a catheter, both guided by ultrasound. The main advantage of CVS is that it offers early and accurate diagnosis of genetic conditions, but it carries risks of miscarriage or infection due to its invasive nature.

2.1.2.5. Foetal Magnetic Resonance Imaging (Foetal MRI)

Foetal MRI is a non-invasive imaging technique that uses magnetic resonance to provide detailed, high-resolution images of the foetus, often performed in the second or third trimester. It is particularly valuable for evaluating foetal brain, spine, chest, and abdominal abnormalities when ultrasound findings are inconclusive or insufficient. It offers superior soft-tissue contrast and can visualise structures that are less visible on ultrasound, aiding in better diagnosis and prenatal planning. However, it is not used as a primary screening tool but rather as a complementary diagnostic method in complex cases.

2.1.3. Environmental and Other Influences on Prenatal Development

Genetic instructions guide prenatal development, but their expression is continuously shaped by the intrauterine environment, in which the foetus grows and interacts, shaping its distinctive developmental pattern. Just as we are influenced by the physical and social environment surrounding us, so is the foetus affected by the environment provided by the womb. This includes everything from the molecules that enter the foetus's bloodstream to the maternal situation, encompassing the mother's health, behaviours, physical environment, and broader social conditions.

These factors exert a profound influence on foetal development, sometimes enhancing it and sometimes placing it at risk. Their effects range from temporary delays in development to long-term physical, cognitive, or behavioural consequences. These influences are typically grouped into biological, behavioural, environmental, and contextual factors. Understanding them helps explain why the same developmental blueprint can lead to different outcomes depending on the conditions in which pregnancy occurs.

2.1.3.1. Maternal Health and Nutrition

The mother's health plays a central role in supporting foetal growth, as she is the foetus's sole source of nourishment.

Nutrient intake by the mother: Adequate intake of nutrients by the pregnant woman, such as folic acid, iron, calcium, and protein, is essential for foetal brain development, organ formation, and in preventing conditions like neural tube defects. Malnutrition or micronutrient deficiencies can result in low birth weight, premature birth, or developmental delays.



Health conditions of the mother: Chronic conditions such as diabetes, hypertension, thyroid disorders, and obesity can affect foetal growth patterns. Untreated infections, such as rubella, AIDS, or syphilis, may lead to congenital abnormalities.

Table 2.1.1. Drugs taken by the mother and their effect on the foetus or the newborn

Drug	Effects
Alcohol	Prenatal exposure to alcohol can lead to a small head, facial abnormalities, heart defects, low birth weight, and intellectual disability.
Antiepileptic drugs	Drugs such as phenytoin (Dilantin), phenobarbital (Luminal), and carbamazepine (Tegretol), used to treat seizures, increase the incidence of cleft lip and palate, neural tube defects, kidney disease, and restricted growth.
Over-the-counter drugs for pain relief/fever	Pills such as acetaminophen, aspirin and ibuprofen, when used in large quantities, may cause neonatal bleeding and gastrointestinal discomfort and are also associated with low birth weight, premature birth, and increased risk of miscarriage.
Chemotherapy drugs	Such drugs cross the placenta and attack rapidly dividing cells. They can increase malformations and lead to miscarriage, particularly when administered to the mother during the first trimester.
Marijuana	Heavy use of marijuana has been linked to premature birth, low birth weight, and mild behavioural abnormalities such as irritability at birth. It does not seem to influence general intelligence but may affect some of the skills that contribute to higher-level problem solving, including sustained attention and cognitive flexibility.

Narcotics	Addiction to heroin, codeine, methadone, or morphine increases the risk of premature delivery and low birth weight. Newborns are often addicted and experience potentially fatal withdrawal symptoms such as vomiting and convulsions.
Hormone Pills	Birth control pills containing female hormones have been known to produce heart defects and cardiovascular problems (today's pill formulas are safer). Progesterone in drugs used to prevent miscarriage may masculinise the foetus. Diethylstilbestrol, once prescribed to prevent miscarriage, increased the risk of cervical cancer and created infertility and pregnancy problems in exposed daughters.
Tobacco	Infants of smokers tend to be small and premature, have respiratory problems, and sometimes show intellectual deficits or behavioural problems later in development. Sons whose mothers smoked during pregnancy may later have fertility problems. Exposure to passive smoking can increase the risk of miscarriage.

2.1.3.2. Teratogens

A teratogen is any disease, drug, or environmental agent that disrupts the normal pre-natal development of the foetus or the embryo. The effects depend on the dose, timing, genetic vulnerability, and duration of exposure. The embryonic stage is particularly sensitive to teratogens, but exposure at any stage can have lasting consequences.

Common teratogens include:

i. Drugs and Alcohol

Consumption of alcohol by the mother readily crosses the placenta, affecting the foetus directly and disrupting the hormone functions of the placenta. It can lead to *Foetal Alcohol Syndrome (FAS)*, with noticeable physical symptoms such as a small head and distinctive facial abnormalities, as well as the risk of central nervous system damage.



The use of illicit drugs and some prescription medications (e.g. thalidomide) may disrupt brain development or cause withdrawal symptoms in newborns.

Thalidomide: A Lesson in Prenatal Exposure to Drugs

Thalidomide, a tranquilliser, gained widespread popularity across Europe in the 1950s. It was primarily prescribed to alleviate the morning sickness frequently experienced by women, particularly during the first trimester of pregnancy. The drug was initially deemed safe, as preliminary testing had revealed no adverse effects.

Tragically, the drug produced catastrophic adverse effects in humans. The resulting crisis served as a defining tragedy, alerting the world, more profoundly than any previous event, to the significant dangers of pharmaceutical consumption during gestation.

Thousands of infants were subsequently born with missing or malformed limbs and other physical deformities, and it became evident that the timing of drug exposure determined the specific type of defect. These findings fundamentally highlighted the existence of critical periods in prenatal development, moments when specific embryonic structures are forming and are therefore acutely vulnerable to external teratogens.

ii. Use of Tobacco

Smoking (including passive smoking) or nicotine intake is associated with low birth weight, respiratory problems, an increased chance of cleft lip and cleft palate (an opening in the roof of the mouth), and an increased risk of miscarriage or sudden infant death.

iii. Environmental Toxins

Exposure to lead, mercury (often through contaminated seafood), pesticides, pollutants, and industrial chemicals can affect the neural development and growth of the foetus.

iv. Radiation

High levels of radiation, though rare in daily life, may cause developmental abnormalities. Even clinical doses of radiation, such as those used in X-rays and cancer treatment, can cause mutations, spontaneous abortions, and a variety of birth defects, especially if the mother is exposed between weeks 8 and 15.

2.1.3.3. Maternal Psychological State

Psychological factors affecting the mother influence foetal development through hormonal pathways. High or prolonged maternal stress can elevate cortisol levels, which cross the placenta and affect foetal brain development. Potential outcomes of this include low birth weight, preterm birth, increased infant irritability, and later difficulties in attention, emotional regulation, or stress response. Supportive relationships, prenatal care, and stress-reduction practices can help buffer these effects.

2.1.3.4. Maternal Age

Both very young mothers (below 18) and older mothers (above 35) often face heightened risks. Adolescent pregnancies may involve nutritional deficiencies, inadequate medical care, and a higher risk of low birth weight. Older maternal age is often associated with an increased risk of chromosomal abnormalities (e.g., Down Syndrome) and complications such as gestational diabetes or hypertension.

2.1.3.5. Paternal Factors

Although often overlooked, paternal health also shapes prenatal outcomes. While there is no extensive research on paternal influence on prenatal development beyond genetic contributions, factors such as paternal age, substance abuse patterns, and exposure to toxins influence foetal development. Research has consistently identified advanced paternal age (that is, 50 and older) as a risk factor for schizophrenia, as well as increased risks of miscarriage and Down syndrome. Prolonged paternal exposure to radiation, anaesthetic gases used in operating rooms, pesticides, or other environmental toxins has also been found to damage the genetic material in sperm and cause genetic defects in the offspring.

2.1.3.6. Socioeconomic and Cultural Conditions

Broader contextual factors, such as access to resources and living conditions, also affect prenatal development. Instances of poverty can lead to limited nutrition, inadequate healthcare, higher exposure to pollutants, and chronic stress, negatively influencing foetal development. Cultural practices, including dietary norms, taboos, and traditional beliefs, can sometimes support and at other times hinder prenatal health. However, access to prenatal care, such as regular medical check-ups, can ensure timely detection of risks and promote healthy pregnancy behaviours.

Prenatal development reflects a constant interaction between the genetic potential of the foetus and the conditions of the environment in which it grows, as well as the circumstances of the mother. While many environmental influences can be managed or modified through healthcare, education, and supportive contexts, others require broader social and policy-level interventions. Understanding these influences highlights the importance of protecting the prenatal environment to ensure healthy beginnings for all children.

2.1.4. Genetic and Chromosomal Disorders

While genetics provides the biological basis for prenatal development, variations or errors in the genetic material can sometimes lead to developmental disorders. These conditions may result from mutations in specific genes or abnormalities in the number or structure of chromosomes. Genetic and chromosomal disorders can influence physical growth, cognitive functioning, sensory abilities, and overall health, with effects ranging from mild to severe. Some conditions are inherited from parents, while others occur spontaneously during cell division.



Mechanisms of Inheritance

Mechanisms of inheritance refer to the processes through which genetic traits are transmitted from parents to their offspring. These mechanisms determine how characteristics such as physical features, behavioural tendencies, and susceptibility to certain disorders are passed down through generations.

There are three major mechanisms of inheritance:

1. Single-Gene Pair Inheritance

In this type, a trait is influenced by a single pair of genes, one inherited from the mother and one from the father. Many simple physical traits, such as eye colour and hair colour, as well as certain hereditary disorders, follow this pattern. The dominant gene determines the trait if paired with a recessive one, while a recessive trait is expressed only when both genes in the pair are recessive.

2. Sex-Linked Inheritance

Here, the genes responsible for a trait are located on the sex chromosomes (X or Y). Because males have one X and one Y chromosome, and females have two X chromosomes, some traits occur more frequently in males. For example, disorders such as haemophilia and red-green colour blindness are typically passed through the X chromosome. They are therefore more common in males, who lack a second X chromosome to potentially offset the defect.

3. Polygenic (Multiple-Gene) Inheritance

Many traits are not controlled by a single pair of genes but by several pairs of genes working together. These polygenic traits typically exhibit continuous variation within a population and include characteristics such as height, weight, skin colour, intelligence, and many personality traits. Because multiple genes contribute to the trait, its expression is determined by the cumulative effect of many genetic factors. Furthermore, these genes often show significant gene-environment interactions, in which the final observable trait (phenotype) results from the combined effects of genetic factors and external environmental influences.

2.1.4.1. Genetic Disorders

Genetic disorders are health conditions that occur due to abnormalities or mutations in one or more genes within the DNA of an individual. They can be inherited from one or both parents or occur for the first time in a child.

Common examples include:

i. Sickle Cell Anaemia

This is a genetic blood disorder caused by a mutation in the HBB gene on chromosome 11. This mutation leads to the production of abnormal Haemoglobin-S (HbS), which causes red blood cells to become rigid and sickle-shaped instead of smooth and round, breaking down rapidly, blocking blood vessels, and reducing oxygen delivery. Those affected experience difficulty in breathing, painful swelling of joints, and blood clots.

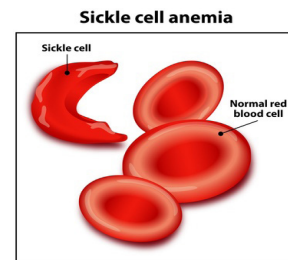


Fig.2.1.3. Sickle cell anaemia

ii. Haemophilia

Haemophilia is an X-linked recessive disorder caused by mutations in the F8 gene (Haemophilia A) or the F9 gene (Haemophilia B) on the X chromosome, resulting in inadequate clotting factors. Individuals with this condition bleed for longer periods, even after minor injuries, and internal bleeding into muscles and joints can lead to swelling, pain, restricted movement, and serious complications when haemorrhages occur. This disorder is typically more common in males than in females.

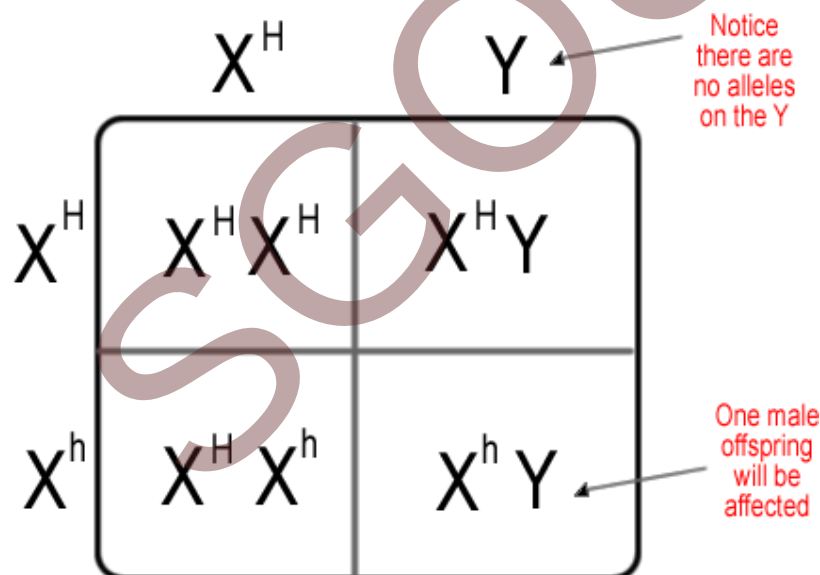


Fig.2.1.4. Haemophilic genotype inheritance diagram

iii. Huntington's Disease

Huntington's Disease is a dominant, inherited, progressive neurological disorder caused by a mutation in the HTT gene on chromosome 4, which leads to the nerve cells in the brain to decay over time. Although symptoms typically appear in adulthood, the altered gene influences neural functioning from conception, resulting in a progressive loss of voluntary motor control, cognitive decline, and emotional disturbances.

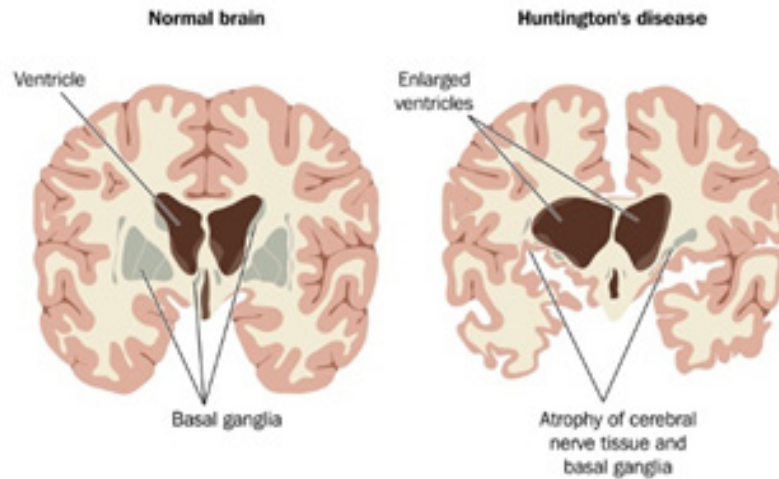


Fig.2.1.5. Huntington's Disease

iv. Phenylketonuria (PKU)

Phenylketonuria (PKU) is a metabolic disorder caused by mutations in both copies of the PAH gene, inherited as an autosomal recessive gene pair. This gene provides instructions for making the phenylalanine hydroxylase (PAH) enzyme. The disorder results in a lack of the PAH enzyme required to metabolise phenylalanine found in milk and many other foods, leading to the conversion of phenylalanine into an acid that attacks the nervous system and causes intellectual disability

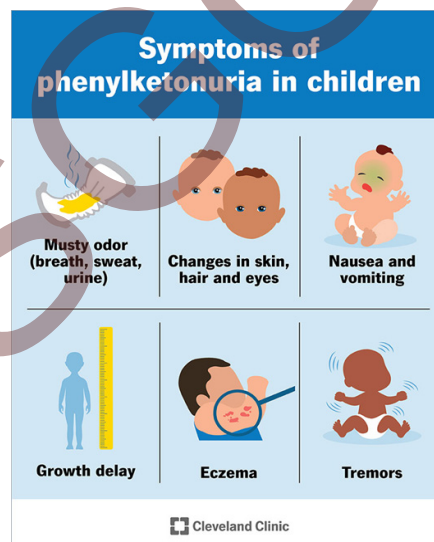


Fig.2.1.6. Phenylketonuria symptoms

2.1.4.2. Chromosomal Disorders

Chromosomal disorders refer to a set of medical conditions, diseases, or syndromes caused by abnormalities in the number or structure of chromosomes, commonly due to nondisjunction (the failure of chromosomes to separate properly during cell division).

Common examples include:

i. Down Syndrome (Trisomy 21)

Down syndrome is a genetic condition caused by the presence of an extra full or partial copy of chromosome 21, leading to a total of 47 chromosomes instead of the usual 46. This additional genetic material disrupts normal development, causing characteristic physical features such as distinctive eyelid folds, short stubby limbs, and a thick tongue; mild to moderate intellectual disability; and an increased risk of health issues, including heart defects and respiratory problems.



Fig.2.1.7 Child with Down-Syndrome (AI Generated Illustration)

ii. Turner Syndrome (XO)

Turner syndrome occurs in females with only one X chromosome instead of a pair (XX), resulting in short stature, stubby fingers and toes, incomplete ovarian development, delayed puberty or infertility, cardiovascular concerns, and often lower-than-average spatial and mathematical reasoning.

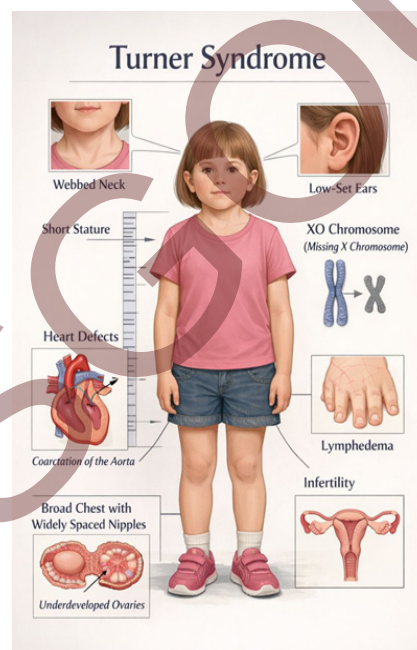


Fig.2.1.8. Turner Syndrome (AI-Generated Illustration)

iii. Klinefelter Syndrome (XXY)

Occurs in males with an extra X chromosome (XXY) and tends to be tall, but sterile, and at puberty, develops feminine sex characteristics such as enlarged breasts.

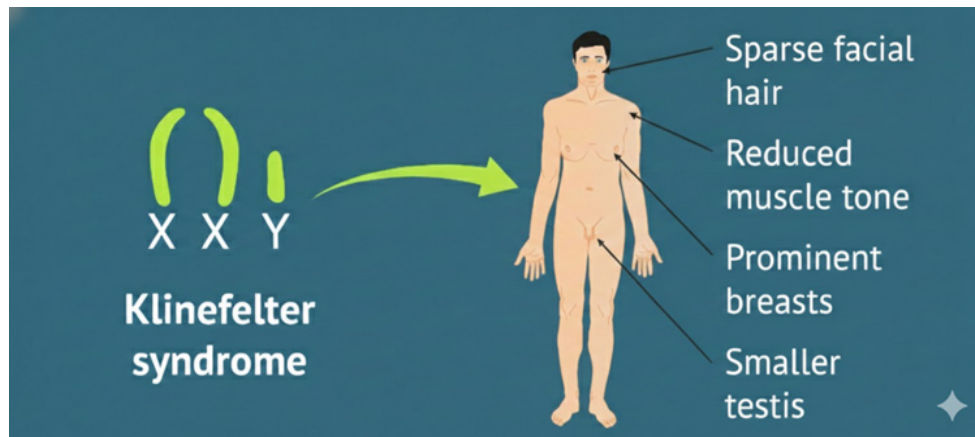


Fig. 2.1.9. Klinefelter Syndrome (AI-Generated Illustration)

iv. Fragile X Syndrome

A genetic condition characterised by one arm of the X chromosome being only barely connected to the rest of the chromosome, and seems prone to breaking. Fragile X syndrome is considered the most common hereditary cause of intellectual disability, or some degree of cognitive impairment in most affected persons, and autism in some as well.

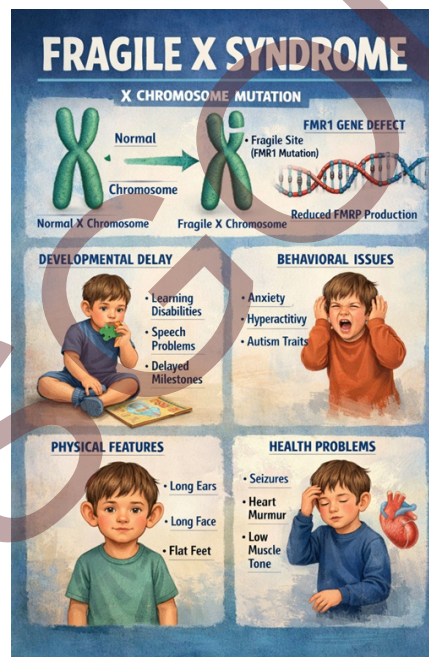


Fig.2.1.10. Fragile X Syndrome (AI-Generated Illustration)

2.1.5. The Competent Newborn

Human neonates are born entirely dependent on their caregivers for survival, unlike most other species. They are unable to feed themselves, move independently, or protect themselves from danger. Despite physical immaturity, the human newborn demonstrates organised and adaptive capacities. Newborns possess a range of abilities that prepare them to engage effectively with their environment. They can breathe and regulate temperature,

respond to touch, sound, and light, recognise familiar voices, and demonstrate survival reflexes such as sucking and rooting. Thus, the newborn is a competent participant in early interactions, actively responding and laying the foundations for future development.

The following sections discuss in brief this early competence through a focus on neonatal health and responsiveness, and newborn reflexes and perceptual capacities.

2.1.5.1. Neonatal Health and Responsiveness

Neonatal health refers to the physical condition and well-being of an infant from birth to the first four weeks of life, a period known as the *neonatal* stage. This is a critical period because the newborn must adapt from life in the womb to life outside. During this time, the infant undergoes rapid physiological adjustments, including the initiation of independent breathing, regulation of body temperature, and the development of stable feeding and sleeping patterns. The quality of neonatal health is influenced by prenatal care, the circumstances of birth, and the care received immediately after delivery.

Neonatal responsiveness refers to a newborn's ability to respond to external and internal stimuli, indicating early signs of sensory and motor functioning. Newborns demonstrate responsiveness primarily through their reflexes. They can also recognise the mother's voice within a few days, show preference for human faces, respond to changes in light and sound, and express comfort or discomfort through crying, facial expressions, and body movements. These responses indicate neurological functioning and help caregivers understand the infant's needs.

Thus, neonatal health and responsiveness are critical components of newborn care and are assessed to ensure the well-being of infants immediately after birth and throughout the neonatal period.

- **Initial Assessment**

Neonatal assessment begins at birth with quick evaluations such as the Apgar score, which rates the infant's heart rate, respiratory effort, muscle tone, reflexes, and colour at one and then five minutes after delivery to determine the infant's adjustment to extrauterine life. Scores of 7 or above are generally considered healthy, while lower scores indicate distress and the need for immediate intervention. If the 5-minute score is below 7, it is often reassessed at 5-minute intervals until the infant's condition improves, up to 20 minutes after birth.

- **Physical Examination**

A thorough head-to-toe physical examination follows, including checking vital signs (such as temperature, pulse, and respiration), measuring physical parameters (such as weight, length, and head circumference), and inspecting for congenital anomalies or birth injuries. Examination of orifices, heart and lung sounds, abdomen, genitals, and neurological functions, including reflexes, helps identify any deviations from normal development that might require medical attention.

- **Responsiveness and Neurological Evaluation**

Newborn responsiveness is assessed through reflex testing, muscle tone (the natural tension or resistance of muscles to movement), and behavioural reactions (such as the infant's observable responses to stimuli such as movements or changes in alertness).



- **Ongoing Monitoring**

Neonatal health is continuously monitored during the hospital stay and at follow-up visits to ensure proper growth, feeding, immune function, and development, with timely interventions for any detected complications or delays.

Apgar Scale

The Apgar scale is the standardised rating scale used to assess the newborn's physical condition immediately after birth. Developed by physician Virginia Apgar, the scale focuses on five basic qualities: heart rate, respiratory effort, reflex irritability, muscle tone, and colour.

A rating from 0 to 2 is given for each of the five characteristics at 1 and 5 minutes after birth. An Apgar score of 7 or better indicates that the infant is in good physical condition. If the score is between 4 and 6, the infant requires special help in establishing breathing and other vital signs. A score of 3 or below indicates that the infant is in serious danger and requires emergency medical attention. Two Apgar ratings are recorded, as some infants may have trouble adjusting initially but do well after a few minutes.

Apgar Scoring System

Indicator		0 Points	1 Point	2 Points
A	Activity (muscle tone)	Absent	Flexed limbs	Active
P	Pulse	Absent	< 100 BPM	> 100 BPM
G	Grimace (reflex irritability)	Floppy	Minimal response to stimulation	Prompt response to stimulation
A	Appearance (skin color)	Blue Pale	Pink body Blue extremities	Pink
R	Respiration	Absent	Slow and irregular	Vigorous cry



Table 2.1.2. The Apgar Scale

Sign	Score		
	0	1	2
Heart Rate	No heartbeat	Under 100 beats per minute	100 to 140 beats per minute
Respiratory Effort	No breathing for 60 seconds	Irregular, shallow breathing	Strong breathing and crying
Reflex Irritability (sneezing, coughing, and grimacing)	No response	Weak reflexive response	Strong reflexive response
Muscle Tone	Completely limp	Weak movements of arms and legs	Strong movements of arms and legs
Colour	Blue body, arms, and legs	Pink body with blue arms and legs	Pink body, arms, and legs

2.1.5.2. Newborn Reflexes

Reflexes are unlearned, organised involuntary responses that appear automatically in the presence of certain stimuli. They are present at birth and serve as important indicators of the functioning and maturity of the newborn's nervous system. Reflexes support survival, enable early interaction with the environment, and provide the foundation for later voluntary motor skills. Because reflexes are closely linked to neurological development, their presence, strength, or absence is a key part of assessing neonatal health.

Major neonatal reflexes include:

i. Rooting Reflex

This involves turning towards the direction of stimulation (such as a light touch) near the mouth. It guides the infant toward potential sources of food that are near its mouth, such as a mother's nipple. This reflex typically disappears in four to six months.



Fig 2.1.11 Rooting Reflex (AI- Generated for Illustration)

ii. Sucking Reflex

When an object such as a finger or nipple touches the roof of the infant's mouth, the infant automatically begins to suck, which is essential for feeding and is coordinated with swallowing and breathing.



Fig.2.1.12. Sucking Refer (AI Generated for Illustration)



iii. Moro Reflex (Startle Reflex)

A sudden noise or movement causes the infant to throw its arms outward and arch its back, reflecting an early protective mechanism. This reflex usually disappears in five to six months.



Fig.2.1.13. Moro Reflex
(AI Generated for Illustration)

iv. Grasp Reflex (Palmar and Plantar)

The infant will close its fingers or toes tightly around an object that is placed in its palm or on the sole of its foot. This reflex supports later voluntary grasping and disappears by three to four months in the hands and nine to twelve months in the feet.



Fig.2.1.14. Palmar Grasp Reflex
(AI-Generated For Illustration)

v. Babinski Reflex

When the sole of the foot is stroked from heel to toe, the infant's toes fan out and then curl. This reflex indicates normal neurological development in infancy and typically disappears by twelve months.



Fig 2.1.16. Babinski Reflex
(AI Generated For Illustration)

vi. Stepping Reflex

When the newborn is held upright with the feet touching a surface, the legs move in alternating stepping motions. Although the infant cannot walk yet, this reflex prepares the neuromuscular system for future walking and disappears around two months.



Fig 2.1.17. Stepping Reflex
(AI- Generated for Illustration)

2.1.5.3. Neonatal Perception

Although newborns appear fragile and limited in ability, they are born with remarkably developed perceptual capacities that enable them to sense, interpret, and respond to their surroundings. Perception helps infants recognise caregivers, begin forming attachments, and learn from the environment. These early sensory abilities lay the groundwork for the later cognitive, social, and emotional development.

i. Vision

Newborns can see from birth, although their visual acuity is not fully developed. They focus best at a distance of twenty to thirty centimetres, which corresponds to the space between their face and the mother's during feeding. They prefer human faces and bold patterns, and can distinguish different colours.

ii. Hearing

Hearing is relatively well developed at birth. Newborns can recognise familiar sounds and show a preference for their mother's voice that they heard in the womb.

iii. Smell and Taste

The senses of smell and taste are highly developed at birth. Infants can differentiate odours and show a preference for the mother's natural scent, which aids bonding. They prefer sweet tastes over sour or bitter ones, supporting the acceptance of breast milk. Additionally, newborns display distinct facial reactions to different flavours, such as puckering their lips when exposed to sour tastes.

iv. Touch

Touch is one of the earliest senses to develop in a newborn. Newborns respond to gentle stroking, skin-to-skin contact, and temperature changes. Touch provides comfort, helps regulate vital body functions such as heart rate and breathing, and plays a crucial role in emotional security and growth.

v. Pain Sensitivity

Neonates are sensitive to pain and respond with physiological and behavioural changes such as crying, increased heart rate, and stress responses.

Recap

- ◆ Prenatal development marks the 40-week period of development from conception to birth.
- ◆ The three stages are: germinal, embryonic, and foetal.
- ◆ The germinal period (weeks 1-2) involves the formation of the zygote and its division into a blastocyst.
- ◆ Implantation of the blastocyst into the uterine wall marks the end of the germinal period.
- ◆ The embryonic period (weeks 3-8) is characterised by organogenesis.
- ◆ The embryo develops three distinct cell layers: ectoderm, mesoderm, and endoderm.
- ◆ The embryonic period is the time of greatest vulnerability to structural damage.



- ◆ The foetal period (week 9 to birth) focuses on growth and functional maturation.
- ◆ *The Age of Viability* (22-24 weeks) is when survival outside the uterus is possible.
- ◆ Screening tests estimate risk; diagnostic tests provide definitive confirmation.
- ◆ Ultrasound uses sound waves to monitor foetal growth and position.
- ◆ Amniocentesis and CVS are invasive diagnostic tests for genetic abnormalities.
- ◆ A teratogen is any agent causing harm to the developing foetus.
- ◆ Foetal Alcohol Syndrome (FAS) is caused by maternal alcohol consumption.
- ◆ Adequate folic acid intake prevents neural tube defects.
- ◆ Genetic disorders are caused by gene mutations (e.g., Sickle Cell Anaemia).
- ◆ Chromosomal disorders involve abnormalities in chromosome number or structure (e.g., Trisomy 21).
- ◆ The Apgar Score assesses neonatal health (heart rate, respiration, etc.) at 1 and 5 minutes.
- ◆ Newborns are competent with adaptive reflexes and possess developed perceptual capacities (vision, hearing, smell, taste, touch).

Objective Questions

1. The prenatal period lasts approximately how many weeks?
2. What is the fertilised egg called?
3. Which prenatal stage lasts from conception to two weeks?
4. What process embeds the blastocyst into the uterine lining?
5. Which stage is most vulnerable to teratogens?
6. What are the three germ layers of an embryo called?
7. At which stage does organogenesis occur?

8. At what week is the age of viability approximately reached?
9. What diagnostic test takes a sample of amniotic fluid?
10. What is the primary imaging tool in pregnancy?
11. Which disorder is caused by Trisomy 21?
12. What is the scoring system used to assess neonatal health?
13. Which condition involves only one X chromosome in females?
14. Which prenatal disorder causes elongated limbs and sterility in males?
15. Which harmful agent causes Foetal Alcohol Syndrome?
16. What are the substances causing prenatal harm called?
17. Which stage experiences the greatest growth in size?
18. What tissue sample is collected during CVS?
19. Which period develops body proportions from head downward?
20. Which behaviour indicates newborn responsiveness?

Answers

1. 40 weeks
2. Zygote
3. Germinal
4. Implantation
5. Embryonic
6. Ectoderm, Mesoderm, Endoderm
7. Embryonic stage
8. 22–24 weeks



9. Amniocentesis
10. Ultrasound
11. Down syndrome
12. Apgar score
13. Turner syndrome
14. Klinefelter syndrome
15. Alcohol
16. Teratogens
17. Foetal period
18. Chorionic villi
19. Cephalocaudal development
20. Reflexes / Crying

Assignments

1. Outline the three stages of prenatal development, detailing the key developmental events that mark the beginning and end of each stage.
2. Explain the process of organogenesis. Why is the 'embryonic period' considered the phase of greatest vulnerability to teratogens?
3. Differentiate between prenatal screening tests and prenatal diagnostic tests. Provide one example of each and discuss their strengths and limitations.
4. Explain the difference between a genetic disorder and a chromosomal disorder. Use PKU and Down Syndrome as examples to illustrate this difference.
5. Describe at least four major newborn reflexes. Explain the adaptive function and typical disappearance time for each one.
6. Describe the competencies of the newborn and the significance of neonatal assessment.

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Unit 2

Infancy

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ♦ discuss the characteristics of infancy and their relevance for understanding early developmental transitions
- ♦ describe development across major domains in infancy, with reference to significant milestones
- ♦ identify major developmental milestones and examine the issues in development faced during infancy

Prerequisite

The first year of life is often described as a period of *rapid growth*, but that phrase hardly captures the scale of the transformation that occurs. A newborn who can only lift its head for a short span becomes, within months, a child who sits, crawls, stands, and eventually takes independent steps. An infant who perceives the world as shifting patterns of light and sound begins to recognise familiar faces, anticipate routines, experiment with objects, and communicate through gestures, vocalisations, and early words. More than being one stage of development, infancy is the stage in which foundational systems of action, thought, and attachment are being built at an extraordinary pace.

While observing an infant, it is easy to notice the milestones, such as the first smile, the first grasp, and the first attempt to pull up; however, beneath these lie deeper developmental processes. Neural pathways are being strengthened or pruned, sensory systems are tuning to the environment, and motor abilities are coordinated with emerging intentions. At the same time, infants also learn how the world works, that actions have consequences, that people respond, and that experiences can be

predictable or surprising. Their bodies, minds, and early relationships develop simultaneously, each influencing the other.

Before you begin this unit, reflect on how much of who you are today can be traced back to the groundwork laid during the infancy period, such as your ability to bond, explore, communicate, and regulate your emotions. Infancy may appear brief on the timeline of life, but it sets the pace for later learning and forms the early template for interacting with the world. Understanding this stage helps you appreciate how the physical, cognitive, and socio-emotional domains interact from the very beginning, shaping the trajectory of development for the years ahead.

Keywords

Cephalocaudal, Proximodistal, Ossification, Myelination, Synaptogenesis, Pruning, Imitation, Habituation, Object Permanence, Rouge Test, Receptive Language, Failure to Thrive

Discussion

2.2.1. Characteristics

Infancy refers to the period from birth to two years of age, a phase marked by rapid and transformative growth across physical, cognitive, emotional, and social domains. It is considered one of the most dynamic periods of human development, during which infants move from total dependency to increasing autonomy in movement, communication, and interaction with the environment.

Several defining characteristics distinguish this stage:

i. Infancy is the shortest of all developmental periods

Compared to later stages such as childhood, adolescence, and adulthood, infancy is extremely brief, lasting only about twenty-four months. Despite its short duration, this period involves significant growth and transformation as infants progress from complete physical and psychological dependence to gaining increasing control over their bodies, emotions, and interactions. The substantial amount of change within this limited period makes infancy developmentally important and highly formative.

ii. Infancy is a time of radical adjustments

Immediately after birth, the infant must adapt from the protected environment of the uterus to the external world. Breathing, regulating body temperature, digesting food,



eliminating waste, and responding to sensory stimulation require rapid physiological and behavioural adjustments, and demand considerable energy and resilience as the infant learns to function independently for the first time.

iii. Infancy is a preview of later development

Patterns visible during infancy often indicate later developmental tendencies. For example, early variations in activity levels, attention, sleep regulation, emotional expression, and responsiveness to stimulation may develop into stable traits in childhood and beyond. In this sense, infancy offers essential clues about emerging personality, future learning styles, and social behaviours, acting as a window into later developmental pathways.

iv. Infancy is a hazardous period

Infants are highly vulnerable due to immature body systems, limited immunity, and complete dependence on caregivers. Illness, injury, malnutrition, unsafe environments, and inadequate caregiving can pose serious risks to health and survival. Emotional and social risks, such as neglect, abuse, or disrupted attachment, can also have long-lasting consequences, thus demanding careful protection, nurturing environments, and responsive caregiving.

2.2.2. Domains of Development in Infancy

Development during infancy occurs across multiple interconnected domains. The most significant changes appear in physical and motor growth as well as cognitive development, which together lay the foundation for later learning and behaviour. Understanding these domains helps caregivers and professionals recognise what is typical and how infants progressively build skills through interaction with their bodies and environments.

2.2.2.1. Physical Development in Infancy

Physical development during infancy refers to changes in body size and proportions, as well as the maturation of internal systems, particularly the brain and nervous system. It includes somatic growth, neurobiological maturation, and the emergence of motor competence.

◆ Physical Growth

Infancy is characterised by rapid physical growth, with infants typically doubling their birth weight by five months and tripling it by their first birthday. Physical growth follows a *cephalocaudal* (head-to-toe) and *proximodistal* (centre-outward) trend, with a rapid increase in length, weight, head circumference, and brain volume during the first two years, forming the structural basis for later functioning.

◆ Muscular and Skeletal Development

The transformation from a high cartilage-to-bone ratio to greater bone ossification is a key structural change in infancy. As ossification progresses, the skeletal framework that was predominantly cartilaginous (which allows flexibility during growth and movement) becomes increasingly rigid and supportive, setting the foundation for postural control and coordinated movement.

Parallel to skeletal maturation, there is a rapid increase in muscle mass and strength. During the first two years of life, this muscular development provides the biomechanical foundation for achieving developmental milestones such as sitting, crawling, standing, and walking. The growth of muscle fibres in both size and function enhances the infant's ability to generate force and maintain balance.

◆ Brain Development

The brain undergoes massive growth and reorganisation. The rapid increase in brain weight is driven primarily by:

- *Glial cell proliferation*: Glial cells multiply rapidly, supporting neuronal health and facilitating signal transmission.
- *Myelination*: This refers to the process of insulating neuronal axons with the myelin sheath (a fatty substance produced by glia), facilitating faster transmission of neuronal signals. Myelination follows a sequence, with sensory and motor areas myelinating earlier than the prefrontal cortex.
- *Synaptogenesis and pruning*: Together, synaptogenesis (the rapid formation of new synapses between neurons during early brain development) and synaptic pruning (where excess or weak synapses are selectively eliminated) ensure that neural connections are optimised based on genetic programming and environmental experiences.
- *Brain Plasticity*: The infant brain exhibits high plasticity due to the combined effect of synaptogenesis and pruning, meaning the brain is highly adaptable to environmental inputs.

◆ Motor Development

This includes the development of both gross motor skills and fine motor skills. Gross motor development involves the control of large muscle groups and postural stability, progressing from primitive reflexes to voluntary control of the head, trunk, and limbs, and then to sitting, crawling, standing, and walking. Fine motor development concerns increasingly precise control of the hands and fingers, including reaching, grasping, transferring objects, and early manipulation.

◆ Sensory Maturation

Visual acuity improves significantly, with depth perception emerging typically around five to seven months. Auditory development allows infants to distinguish sounds, recognise their caregiver's voice, and begin early language comprehension. The senses, in general, become increasingly refined and responsive to the environment, enabling the infant to recognise familiar voices, track moving objects, explore textures, and develop preferences.

2.2.2.2. Cognitive Development in Infancy

Cognitive development during infancy involves advances in perception, attention, memory, learning, and early problem-solving. Infants actively construct understanding through sensorimotor experiences and repeated interactions with objects and people. They gradually learn to recognise patterns, anticipate events, and respond purposefully



to achieve desired outcomes. Key aspects include:

◆ **Sensorimotor Processes**

Piaget's theory of cognitive development outlines six sub-stages within the sensorimotor stage, in which infants progress from reflexive actions to symbolic thought:

- *Simple Reflexes* (0-1 month): Infants react to the world using innate reflexes, such as sucking and grasping. These actions are involuntary and automatic.
- *Primary Circular Reactions* (1-4 months): Infants repeat actions that are pleasurable or that involve their own bodies, such as thumb-sucking or kicking legs for enjoyment.
- *Secondary Circular Reactions* (4-8 months): Infants begin to repeat actions that produce a response in the external environment, such as an infant repeatedly shaking a rattle to hear the sound it makes.
- *Coordination of Secondary Circular Reactions* (8-12 months): Infants start combining different actions, and exhibit goal-directed behaviour. Object permanence also emerges at this stage.
- *Tertiary Circular Reactions* (12-18 months): Infants start experimenting with different actions to see the effect, such as dropping objects from different heights to see the effect.
- *Beginning of Representational Thought* (18-24 months): Infants can now think about objects and events without directly interacting with them, leading to the beginning of symbolic thought and language.



Fig. 2.2.1. Substages of Piagetian Sensorimotor Stage

◆ **Capacity for Learning**

Infants are endowed with powerful learning mechanisms that quickly expand their abilities:

- *Habituation and Dishabituation*: Infants show a reduced response to a familiar stimulus (habituation) and renewed attention to a novel one (dishabituation).
- *Classical Conditioning*: Learning to associate a neutral stimulus with an unconditioned response (e.g., a touch on the cheek leads to sucking).
- *Operant Conditioning*: Learning through reinforcement (e.g., cooing is reinforced by a parental smile, increasing the likelihood of cooing again).
- *Imitation*: The early capacity to mimic facial expressions and, later, deferred imitation (repeating an observed action hours or days later), which signals the development of mental representation and memory.

◆ Memory and Attention

- Memory development begins with *recognition* memory, which emerges early in infancy and allows infants to identify familiar people and objects. *Recall* memory, requiring the active retrieval of stored information, develops later toward the end of infancy.
- *Deferred imitation*, where infants reproduce observed actions after a delay, demonstrates representational memory and reflects advancing cognitive and memory capacities.
- Improvements in sustained attention during this period enhance infants' ability to focus on tasks, supporting problem-solving and learning.

◆ Concepts that develop in infancy

- *Concept of Space*: Infants start to understand spatial relationships through exploration, gradually perceiving distances, object locations, and their own movement in relation to their surroundings. By two years of age, infants rarely reach for objects that are beyond their reach.
- *Sex-Role Concepts*: Early in infancy, infants begin to notice differences in people's appearances, voices, and behaviours, gradually forming simple associations that later develop into a fairly definitive concept of what the members of the two sexes are supposed to look like.
- *Social Concepts*: Infants start responding to the emotions of others by eight months and gradually develop the ability to recognise cues such as facial expressions, tone of voice, and gestures, helping them understand emotions, intentions, and interactions by the end of infancy.
- *Concept of Self*: A sense of self-awareness typically begins to emerge between 18 and 24 months, as infants recognise their bodies as different from others, often demonstrated by the 'Rouge test' (recognising oneself in a mirror).

◆ Beginning of Morality

While moral reasoning fully develops later, the foundational components of morality emerge in infancy:

- *Empathy Precursors*: Infants cry in response to another infant's cry, suggesting a primitive capacity for emotional mirroring.
- *Prosocial Behaviour*: By eighteen to twenty-four months, infants may engage in simple helping behaviours (e.g., picking up a dropped item for a parent).

◆ Problem-solving and Categorisation

Even before infants develop the capacity for language, they begin to categorise stimuli based on perceptual features such as shape and colour, gradually incorporating more complex conceptual properties. A clear example of this ability is when infants learn to use tools or actions to achieve a goal, such as pulling a cloth to bring an out-of-reach toy closer or crawling around a barrier to retrieve a desired object.



2.2.2.3. Language Development in Infancy

Language development involves the emergence of communicative intent, symbolic understanding, speech perception and production, and grammatical structures. Although closely integrated with cognitive processes, language development is recognised as a distinct trajectory due to specialised neural substrates and social functions.

◆ Prelinguistic Stage

- Crying and vegetative sounds characteristic of the first two months serve as the primary communicative mechanisms.
- Between two and four months, infants start cooing, producing vowel-like sounds, followed by babbling around six months, which initially includes repetitive syllables common across all languages.
- As babbling progresses, *canonical babbling* with repeated consonant-vowel combinations (e.g., *ma-ma* or *ba-ba*) and *variegated babbling* with varied syllables (*ba-da-ma*) indicate increasing complexity in vocal patterns.
- Gesture development, such as pointing and showing objects, supports joint attention of the infant and the caregiver, which is a major predictor of later language development.

◆ Linguistic Stage

- First words emerge at 10-14 months and are typically object-based (holophrases). Infants learn to pronounce words partly through trial and error, but mainly by imitating adult speech. Generally, consonants are more difficult for infants to pronounce than vowels.
- Vocabulary spurts occur around 18-24 months. Infants usually first learn the names of people and objects, then verbs, and a few adjectives during the infancy period. Prepositions, conjunctions, and pronouns are not typically learned until early childhood.
- The first sentences usually appear between twelve and eighteen months, but mostly consist of one word accompanied by a gesture (telegraphic speech; e.g., “more milk,” “mama go”). Though gradually more words are added, gestures predominate until well into childhood.

◆ Receptive Language *versus* Expressive Language

While verbal language starts a little later, infants rapidly develop receptive language (understanding words) well before expressive language (speaking words). They learn to recognise phonemes, use gestures, and eventually say their first words, often around twelve months.

2.2.2.4. Social and Emotional Development

Social and emotional development in infancy encompasses the emergence of affective styles, the regulation of emotions, interpersonal relatedness, attachment formation, and early social participation. This period involves the establishment of patterns of interaction that shape later social competence and emotional functioning.

◆ Emotional Development and Patterns

Newborns display generalised distress and pleasure; discrete emotions such as joy, anger, sadness, and fear emerge during the first year. There are two distinctive features of infant emotions. First, they are brief in duration but intense while they last, and they appear frequently but are transitory, giving way to other emotions when the infant's attention is distracted. Second, emotions are more easily conditioned during infancy than in later stages.

◆ Social Interaction

At birth, infants are indifferent to who attends to their physical needs. However, at around six weeks of age, they begin to smile in response to another person, marking the beginning of socialisation. During the first year, infants are generally in a state of equilibrium, characterised by friendly, easy-to-handle, and pleasant behaviour. By the middle of the second year, infants may become fussy, uncooperative, and difficult to handle. However, by the end of infancy, the equilibrium is typically restored, and infants exhibit pleasant and socially engaging behaviours.

Table. 2.2.1. Social Interaction

Social Response to Adults	
Age	Response
2-3 months	Infants can distinguish between people and inanimate objects, and they discover that people supply their needs. They are content to be with people but discontented when left alone. At this age, infants show no preference for any person.
4-5 months	Infants want to be picked up by anyone who approaches them. They react differently to scolding, smiling faces, and friendly and angry voices.
6-7 months	Infants differentiate between 'friends' and 'strangers' by smiling at the former and showing fear in the presence of the latter, marking the beginning of the shy age, and also the attachment age. The time when infants become strongly attached to their mothers or mother-substitutes.
8-9 months	Infants attempt to imitate speech, gestures, and simple acts of others.
12 months	Infants react to the warning, 'No!'
16-18 months	Negativism, in the form of stubborn resistance to requests or demands from adults, manifests as physical withdrawal or angry outbursts.



22-24 months	Infant cooperates in a number of routine activities, such as being dressed, fed, and bathed.
Social Response to Other Infants	
4-5 months	Infants try to attract the attention of another infant or a child by bouncing up and down, kicking, laughing, or blowing bubbles.
6-7 months	The infant smiles at other infants and shows an interest in their crying.
9-13 months	Infants attempt to explore the clothes and hair of other infants, imitate their behaviour and vocalisations, and cooperate in the use of toys (although they tend to become upset when other infants take one of their toys).
13-18 months	Fighting over toys decreases, and infants show more cooperation during play and a willingness to share.
18-24 months	Infants show more interest in playing with other infants and uses play materials to establish social relationships with them.

♦ Beginnings of Interest in Play

There are certain characteristics of play in infancy that make it distinctive from the play of young or older children. First, it is not bound by rules or regulations and is often free and spontaneous. Second, throughout infancy, play is more solitary than social. Common patterns of play in infancy include:

- *Sensorimotor play*, as the earliest form, consisting of acts such as kicking, bouncing, babbling, and rolling.
- *Exploratory play* emerges as hand coordination develops and involves exploring their bodies by pulling their hair, sucking their fingers and toes, etc.
- *Imitative play* emerges during the second year, where infants try to imitate the actions of those around them, such as reading a magazine, sweeping the floor, or trying to hold a pencil or pen to write.
- *Make-belief play* emerges in the second year itself, where infants endow their toys with qualities from real life, such as treating a toy as if it were their infant.

2.2.3. Developmental Issues in Infancy

Although many infants follow normative developmental pathways, delays and disturbances may be observed due to genetic, environmental, medical, nutritional, or psychosocial factors. Developmental issues may be transient or persistent and should be assessed early or monitored for effective intervention.

a. Issues related to Motor and Physical Development

- Delayed motor milestones, such as not sitting by nine months or walking by eighteen months, may indicate neuromuscular dysfunction or developmental coordination disorder.
- Low muscle tone (hypotonia) or asymmetrical movement patterns may signal neurological conditions such as cerebral palsy.
- Failure to Thrive (FTT) due to poor nutrition, chronic illness, or inadequate caregiving.

b. Cognitive and Perceptual Issues

- Persistent difficulty in attention regulation or problem-solving may indicate early cognitive delays.
- Lack of object tracking or weak visual engagement may reflect visual impairment.
- Minimal exploration or limited curiosity may indicate environmental deprivation.

c. Issues Related to Language Development

- Absence of babbling by seven to eight months or lack of meaningful words by eighteen months may indicate speech disorders or hearing impairment.
- Poor response to sound may suggest conductive or sensorineural deficits.

d. Issues Related to Social and Emotional Development

- Lack of social smile by three months or poor eye contact may be early indicators of atypical social development, including autism spectrum disorders.
- Indifference to caregivers or absence of separation distress may reflect attachment difficulties.
- Persistent irritability or dysregulated affect may indicate sensory processing challenges or caregiver-infant relational strain.

Recap

- ◆ Infancy (birth to two years) is the shortest but most dynamic developmental period.
- ◆ Infancy requires radical physiological adjustments to the external world.
- ◆ Early patterns in infancy often serve as a preview for later development.
- ◆ Physical growth follows cephalocaudal (head-to-toe) and proximodistal (centre-outward) trends.
- ◆ Ossification increases bone rigidity, supporting posture and movement.



- ◆ Glial cells multiply, and myelination insulates axons for faster signalling.
- ◆ Synaptogenesis (formation) and pruning (elimination) optimise neural connections.
- ◆ The infant brain exhibits high plasticity (adaptability).
- ◆ Motor development includes gross motor skills, such as walking, and fine motor skills, such as writing.
- ◆ Piaget's theory covers six substages of the sensorimotor stage.
- ◆ Object permanence emerges around 8-12 months, during the *coordination of secondary circular reactions* substage.
- ◆ Deferred imitation demonstrates the development of representational memory.
- ◆ Habituation shows reduced response to familiar stimuli.
- ◆ Self-awareness emerges between 18-24 months, often assessed by the Rouge Test.
- ◆ Language develops in stages: prelinguistic stage and linguistic stage.
- ◆ First words (holophrases) typically emerge at 10-14 months.
- ◆ Receptive language (understanding) develops before expressive language (speaking).
- ◆ Social interaction begins alongside an interest in play.
- ◆ Failure to Thrive (FTT) is a key issue related to physical development due to poor nutrition or caregiving.

Objective Questions

1. Infancy lasts from birth until what age?
2. Name the principle that posits physical growth proceeds from the centre outward to the limbs.
3. What process insulates neuronal axons for faster signal transmission?
4. What is the rapid formation of new synapses called?
5. Which Piagetian substage involves infants repeating actions on their own bodies (e.g., thumb-sucking)?

6. What is the term for the knowledge that objects exist when out of sight?
7. What kind of memory development does deferred imitation signal?
8. What cognitive process involves reduced response to a familiar stimulus?
9. What test is used to assess an infant's emerging self-awareness?
10. Which learning mechanism involves reinforcement (e.g., a parent smiling after cooing)?
11. What is the single word used to convey a complete thought (e.g., "milk!") called?
12. Which develops first: receptive language or expressive language?
13. What is the primary characteristic of the first sentences spoken by infants?
14. What is the first clear sign of social interaction, appearing around six weeks?
15. What primary capacity does crying in response to another infant's cry suggest?
16. Which motor skill involves the use of large muscle groups, such as walking?
17. Name the condition of low muscle tone, potentially signalling cerebral palsy.
18. What condition is characterised by a child failing to meet weight gain expectations due to poor nutrition or care?
19. What is the rapid elimination of excess or weak synapses called?
20. What type of memory involves actively recalling stored information and develops later?

Answers

1. Two years
2. Proximodistal



3. Myelination
4. Synaptogenesis
5. Primary Circular
6. Object Permanence
7. Representational
8. Habituation
9. Rouge Test
10. Operant Conditioning
11. Holophrase
12. Receptive
13. Telegraphic speech
14. Social Smile
15. Empathy
16. Gross motor
17. Hypotonia
18. Failure to Thrive (FTT)
19. Synaptic pruning
20. Recall memory

Assignments

1. Explain why infancy is considered a time of radical adjustment and a hazardous period. What are the primary risks associated with this stage?
2. Describe the major changes in brain development during infancy. Specifically, explain the complementary roles of synaptogenesis and synaptic pruning in optimising neural networks.

3. Detail the six substages of Piaget's sensorimotor stage. Provide a unique example of infant behaviour characteristic of the *secondary circular reactions* and *coordination of secondary circular reactions* substages.
4. Explain how the infant's capacity for learning is demonstrated through habituation and classical conditioning. Why are these processes critical for early cognitive development?
5. Describe the emergence of discrete emotions (joy, anger, fear) during the first year of life. What are the two distinctive features of infant emotions?
6. Identify and describe three major developmental issues (one each from the motor, language, and social domains) that a developmental psychologist might monitor during routine check-ups in the second year of life.

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**BLOCK
3**

Childhood

Unit 1

Physical and Motor Development in Childhood

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ explain the major physical and motor developmental tasks of childhood
- ◆ analyse the factors influencing physical and motor development in childhood
- ◆ evaluate issues related to school readiness and early childhood health, emphasising on the role of nutrition and preventive health practices in supporting developmental progress

Prerequisite

There are few sights as striking as the way children move through the world. They rarely walk when they can run, seldom sit when they can climb, and rarely repeat an action without trying to do it faster, higher, or differently. This constant drive to move is not simply excess energy; it is part of how children learn about their own bodies and the environment around them. Through movement, children test their limits, understand space, learn cause and effect, and experience the world through their own actions. A simple act such as jumping from a step, catching a ball, or balancing on one foot is more than physical progress; it reflects a child learning what is possible.

But pause for a moment and consider what these abilities depend on. What allows one child to confidently swing across a bar while another hesitates? What experiences shape the hand control and coordination required for drawing and writing, or the balance needed to ride a bicycle? Physical and motor development during childhood is not predetermined; it is influenced by opportunities for practice, encouragement from adults, a supportive environment, and adequate health. When children are supported to move, explore, and refine skills, they gain not



only physical competence but also confidence and readiness to take on new challenges. When movement is limited, the effects can be seen not only in the body but also in motivation, social participation, and emotional balance. As you begin this unit, reflect on the idea that the development of physical and motor skills is a foundation on which learning, relationships, and self-belief are built, a process far more meaningful than the milestones visible on the surface.

Keywords

Developmental Tasks, Gross and Fine Motor Skills, Hand-Eye Coordination, Maturation, Self-Efficacy, School Readiness, Phonological Awareness, Micronutrient Deficiencies, Restorative Sleep

Discussion

Childhood, the period between ages two and twelve, is a phase of steady growth and exploration. Unlike infancy, where change is rapid and largely physical, childhood is marked by gradual yet significant advancements in the body, motor skills, and independence. This period is thus a time of expanding competence and autonomy, with substages including *early childhood* (3-6 years), *middle childhood* (7-11 years), and *late childhood* (preadolescence).

3.1.1. Developmental Tasks

Developmental tasks refer to the skills, abilities, and behaviours that children are expected to achieve during specific age periods.

i. Motor Skill Development

During childhood, children refine *gross motor skills*, such as running, jumping, climbing, throwing, and catching. Early in this stage, movements may appear clumsy, but through practice, they become smooth and coordinated. *Fine motor skills*, including drawing, writing, using scissors, and manipulating small objects, develop alongside hand-eye coordination and are essential for daily tasks and later academic learning. A child learning to tie shoelaces or ride a bicycle is an example of motor skill development characteristic of this period.

ii. Physical Growth and Health

Growth in childhood is steady, with muscles strengthening, bones lengthening, and body proportions becoming more balanced. Nutritional intake and health habits during this period directly affect energy levels, stamina, and physical abilities.

iii. Self-care and Independence

Developmental tasks achieved at this stage include learning to take care of personal needs, such as dressing, eating independently, grooming, and maintaining hygiene. A typical example is a 6 to 8-year-old child who learns to tie their own shoes, pack their school bag, and follow daily routines, thereby practising both fine motor coordination and executive functioning skills such as planning and sequencing.

iv. Play and Social Interaction

Play is a central developmental task in childhood. It helps children practise physical skills, nurture creativity, understand rules, and negotiate with peers. Engaging in structured games (such as board games like chess), imaginative play (such as role-playing), and sports contributes to cognitive, social, and motor development. Team games like football require running, coordination, and strategic thinking, while imaginative play may involve manipulating objects, drawing, or building models, strengthening both fine motor skills and problem-solving abilities.

v. School Readiness and Learning Skills

Developmental tasks to be achieved at this stage typically include acquiring the foundational cognitive, social, and emotional skills necessary for a successful transition into formal education. This includes developing attentional control and persistence for academic tasks, acquiring pre-literacy skills (like phonological awareness and letter recognition), and mastering early numeracy concepts (such as counting and basic number sense). Furthermore, children must develop social-emotional regulation, which is necessary for their successful adaptation to the structure, demands, and social environment of formal schooling.

vi. Emotional and Behavioural Regulation

This is a core developmental task involving the child's increasing capacity to monitor, evaluate, and modify their emotional and behavioural reactions in adaptive ways, allowing them to function effectively across different social contexts. Key achievements include developing emotional literacy (the ability to identify and name one's feelings) and employing self-calming strategies to manage distress, which facilitates impulse control and appropriate social responses.

Havighurst's Developmental Tasks

Early Childhood

- Learning to take solid foods
- Learning to walk
- Learning to talk
- Learning to control the elimination of body wastes
- Learning sex differences and sexual modesty
- Getting ready to read



- Learning to distinguish right and wrong and beginning to develop a conscience

Late Childhood

- Learning physical skills necessary for ordinary games
- Building a wholesome attitude toward oneself as a growing organism
- Learning to get along with age-mates
- Beginning to develop appropriate masculine or feminine social roles
- Developing fundamental skills in reading, writing, and calculating
- Developing concepts necessary for everyday living
- Developing a conscience, a sense of morality, and a scale of values
- Developing attitudes toward social groups and institutions
- Achieving personal independence

3.1.2. Factors Affecting Physical and Motor Development in Childhood

Imagine a classroom of first graders engaged in a handwriting activity. Some children hold their pencils steadily and write letters neatly across the line, while others struggle with grip, press too hard, or tire quickly. A few may even avoid the task and prefer drawing instead. All these children are roughly the same age, and, according to developmental milestones, they are expected to exhibit similar abilities at this stage. Yet, why do we see such noticeable differences in their performance and progress?

These variations reiterate that physical and motor development is shaped by multiple factors rather than being predetermined. Nutrition, health, daily practice and opportunities for physical activity, family routines, culture, and environmental resources all contribute to how children develop strength, coordination, and motor control. Understanding these influences helps explain why development varies from child to child and how supportive conditions can assist each child in achieving their maximum potential.

The following section discusses in detail the factors affecting physical and motor development in childhood.

a. Biological and Genetic Factors

These factors represent the inherent, non-modifiable influences that establish the foundational potential for physical growth and motor development.

- *Heredity (Genetics)*: A child's genetic endowment dictates fundamental characteristics such as physical stature, body composition (e.g., bone density, muscle fibre type distribution), and the timing of biological maturation. For example, a child genetically predisposed to a *mesomorphic* (muscular) body type may find specific strength-based motor skills easier to acquire than a child with an *ectomorphic* (lean, slight) build.
- *Maturation rate*: This refers to the genetically regulated timeline for the nervous

system and skeletal structure to become ready for complex actions. For instance, myelination, the development of the protective sheath around neurons, must reach the required point before the rapid, coordinated movements necessary for bicycling or fine motor control for writing are possible.

- *Sex differences:* While developmental pathways are largely similar in early childhood, biological sex begins to influence body fat distribution and hormonal changes, which affect strength and motor performance later on. For instance, boys typically show an advantage in skills requiring gross motor power (e.g., throwing velocity) as they approach puberty.

b. Nutrition and Health

These are the vital external resources that support the physical and neurological processes needed for growth and motor learning.

- *Nutrition:* Adequate and balanced intake of macronutrients (proteins, fats, carbohydrates) and micronutrients (especially calcium, iron, and vitamin D) is critical. For example, chronic iron deficiency can lead to fatigue and reduced physical activity, whereas protein and calcium intake support muscle and bone development.
- *Endocrine system function:* The proper functioning of the endocrine system is crucial at this stage. Imbalances in key growth hormones or thyroid hormones can disrupt the expected physical growth trajectory, affecting muscle development and overall physical capacity.
- *Overall health status:* The presence of chronic health conditions or frequent acute illnesses, such as asthma or persistent ear infections, can significantly impact motor development. For instance, repeated ear infections can temporarily disrupt the vestibular system, affecting balance and discouraging a child from engaging in activities like running or climbing, thereby limiting practice opportunities.

c. Environmental Factors

These encompass the physical and social structures that determine the quantity and quality of practice a child receives, which are crucial for skill refinement.

- *Physical environment and safety:* The availability of safe, expansive, and varied spaces, such as parks, natural terrains, and accessible play structures, directly correlates with the opportunity for unstructured, complex motor skill practice.
- *Socioeconomic status:* Socioeconomic status often serves as a proxy for access to resources. A higher status may correlate with access to nutritious food, quality healthcare, and specialised structured activities (e.g., sports camps, music lessons requiring fine motor skills), positively impacting development.
- *Stimulation and practice:* This factor emphasises the concept of experience-dependent plasticity, which means the brain and motor system refine themselves based on repeated use and specific challenges. Skills like handwriting, bicycling, or playing a keyboard are not innate but require active practice and diverse sensory feedback to become efficient and automatic. For example, if a child's environment



prioritises passive, seated entertainment (like prolonged screen time), they may miss crucial opportunities for manipulative play (e.g., using blocks, cutting with scissors, drawing). This deficiency in varied, hands-on stimulation can cause the refinement of fine motor skills to plateau, regardless of the child's genetic potential.

d. Social and Cultural Factors

These factors pertain to the belief systems, expectations, and motivational environment that shape a child's desire and confidence to participate physically.

- *Parental attitudes and encouragement:* The degree to which parents model, encourage, and tolerate random play profoundly affects motor exploration. For instance, a parent who expresses anxiety every time a child climbs may inadvertently foster a sense of physical inhibition, limiting the child's willingness to practice complex movements requiring risk assessment.
- *Cultural and gender expectations:* Societal norms dictate which activities are encouraged or discouraged based on gender or cultural background. For example, if a specific culture does not value competitive sports, both boys and girls in that community may show proficiency in functional daily movements but score lower on standardised tests of specialised athletic skills.
- *Peer and sibling influence:* The social dynamics of play groups provide both motivation and skill modelling. Older siblings or skilled peers often introduce complex motor challenges, encouraging faster skill acquisition through social learning.

e. Psychological Factors

These factors relate to the child's internal state, motivation, and emotional regulation, which critically mediate their willingness and capacity to engage in physical activities and sustain practice.

- *Self-efficacy and physical competence:* This refers to a child's belief in their own ability to successfully execute a motor skill or task. High self-efficacy motivates the child to attempt challenging movements and persist through failure, leading to accelerated skill mastery. Conversely, low self-efficacy can lead to fear of movement (motor anxiety) and avoidance of physical activity. For example, a child with high self-efficacy will quickly try again after falling off a bike. In contrast, a child with low self-efficacy might refuse to get back on, limiting their opportunity for essential practice.
- *Motivation (Intrinsic versus Extrinsic):* A child who is intrinsically motivated (e.g., plays for the sheer joy of movement) tends to practise more consistently and refine skills better than a child who is only extrinsically motivated (e.g., plays only for a reward or praise). Intrinsic motivation is typically a powerful, self-sustaining factor for long-term physical activity.
- *Attention and focus:* Motor learning requires a child to sustain attention, filter out distractions, and process sensory feedback. Executive functions such as working memory and inhibitory control are closely linked to motor development. A child

who struggles with attentional control may have difficulty following multi-step directions in a physical education class, impeding the execution of complex motor sequences.

- *Emotional regulation and stress*: High levels of chronic stress or anxiety can negatively impact performance by interfering with concentration and activating the stress response, which hinders the smooth, coordinated muscle activation required for skilled movement. A child's ability to cope with frustration after failure is crucial for persistence in motor skill development.

3.1.3. School Readiness

The transition from home or preschool to formal schooling marks a significant milestone in early childhood. Not all children begin school with the same level of preparedness, and educators often observe that some children adjust smoothly to classroom routines, while others require more time and support.

School readiness refers to the extent to which a child has developed the essential competencies needed to participate successfully in the school environment. It can be defined as the point at which a child possesses the foundational knowledge, skills, and attitudes necessary to succeed and benefit from the structure and demands of a formal learning environment. It is thus a measure of both the child's developmental status and the readiness of the school environment to meet the needs of all incoming children.

However, it is not limited to knowing the alphabet or numbers, but includes the ability to separate from caregivers without distress, interact with peers, communicate needs, follow routines, concentrate on tasks, and manage basic self-care independently. It should thus be understood not just as academic preparation, but as a holistic developmental state involving multiple domains.

a. Cognitive Domain

This domain covers the intellectual foundation for learning and problem-solving, and is essential for managing the curriculum. Key skills to be acquired include pre-literacy skills such as phonological awareness and letter recognition, including a child's ability to identify the first sound in a word or understand that the number four represents a quantity of four objects, as well as general knowledge of the surrounding world, such as the names of colours, shapes, and animals.

b. Language and Communication

This domain involves the ability to understand and to be understood, serving as the primary tool for classroom instruction and social interaction. It includes skills for receptive language (understanding spoken instructions), expressive language (speaking clearly in complete sentences and asking questions), and pragmatics (using language appropriately in social contexts, such as taking turns to speak). For example, a child may be able to follow a two- or three-step direction from the teacher and clearly articulate a recent event to a peer.



c. Approaches to Learning

This domain concentrates on the child's attitudes and behaviours towards learning, which are essential for sustained engagement in the classroom. It includes factors such as curiosity (the desire to learn), persistence (staying on task despite difficulty), attentiveness (focusing during instruction), and resourcefulness (seeking help or finding solutions).

d. Social and Emotional Domain

This domain focuses on the child's capacity for self-regulation and effective interaction in a group setting, which are crucial for adapting to the social demands of school. Essential factors include emotional regulation, such as managing strong feelings like frustration or excitement appropriately; cooperation or willingness to share materials and engage in reciprocal play; empathy, which involves recognising and responding to the feelings of others; and self-control or inhibiting immediate impulses in favour of following group rules. Readiness in this domain is evident when a child successfully negotiates a conflict with a peer over a resource without escalating to a tantrum or when they wait patiently for their turn during a whole-class activity.

e. Physical and Motor Domain

This domain explicates the child's physical health and the motor coordination required to manage the functional demands of the school environment, ensuring they can actively participate in all activities. Essential factors to be acquired include gross motor skills such as balancing and postural control needed for sitting, fine motor skills like gripping a pencil correctly and cutting paper with scissors, and self-care skills such as dressing independently, managing bathroom needs, and handling lunch containers. Readiness is demonstrated by a child who can maintain an attentive, upright posture at the desk during class hours or possesses the hand dexterity to form recognisable letters and numbers.

3.1.3.1. Factors Influencing School Readiness

School readiness is shaped by a combination of biological, psychological, and environmental factors that interact to support or hinder a child's preparedness for formal schooling. Some of the key influencing factors include:

- *Health and nutrition:* Adequate nutrition and good health are essential for physical growth, brain development, and the energy needed for learning. For example, children with consistent access to nutritious meals show better attention and participation compared to those who experience frequent illness or fatigue.
- *Family environment and parenting practices:* Supportive parenting, a predictable routine, and opportunities for learning at home foster early skills. Reading stories, involving children in conversations, and encouraging independence in daily tasks enhance language, confidence, and self-help abilities.
- *early childhood education and stimulation:* Exposure to preschool experiences or structured play activities supports cognitive, social, and motor development. Children who attend preschool or engage in interactive play often show better cooperation skills and familiarity with group learning.

- *Individual differences and temperament*: Variations in temperament, personality, and rate of development lead to differences in readiness. A naturally cautious child may take longer to separate from caregivers or participate in group activities.
- *Special needs or developmental challenges*: Conditions such as developmental delays, sensory impairments, or learning difficulties affect readiness and require early support. Early assessment and intervention services significantly improve future school adjustment.

3.1.4. Nutritional and Health Considerations During Early Childhood

From a developmental psychology perspective, the quality of a child's health and nutrition is the primary biological mechanism supporting cognitive, emotional, and physical development. Understanding the nutritional and health needs of young children is therefore crucial for parents, educators, and caregivers to ensure that every child gets the best start in life.

3.1.4.1. Nutritional Requirements and Challenges

Nutrition plays a vital role in supporting rapid growth and brain development during early childhood. Adequate intake of proteins, carbohydrates, fats, vitamins, and minerals provides the energy and building blocks necessary for physical growth, strengthening of the immune system, and development of cognitive abilities. Good nutrition also supports emotional well-being and resilience.

However, despite increasing awareness, many children continue to experience nutritional challenges that affect growth and development.

- *Malnutrition (Undernutrition)*: This condition results from insufficient intake of calories, protein, and other essential nutrients, manifesting physically as underweight and stunted growth (low height-for-age). From a developmental standpoint, undernutrition acts as a major inhibitor, often leading to lethargy, reduced exploratory behaviour, and compromised energy for sustained attention, thereby indirectly hindering motor skill acquisition and classroom engagement.
- *Micronutrient deficiencies*: This refers to the lack of essential vitamins and minerals vital for biological functions. For instance, iron deficiency is a primary cause of anaemia, which compromises oxygen delivery to the brain and directly leads to deficits in attentiveness and memory. Likewise, iodine deficiency impairs thyroid function, affecting neurological development, while inadequate calcium and vitamin D impair bone development and immune function.
- *Over-intake and childhood obesity*: Excessive intake of energy-dense, nutrient-poor foods leads to unhealthy weight gain in children. Developmentally, obesity is linked to reduced stamina and mobility, discouraging active play and complex motor practice. Psychologically, it increases the risk of low self-esteem and social challenges, in addition to predisposing children to lifelong metabolic diseases.
- *Feeding difficulties and poor eating habits*: This encompasses irregular meal



schedules, persistent food refusal, and severely limited dietary variety, which may be due to *neophobia*, the fear of new foods. These patterns hinder consistent intake of necessary nutrients and can also impact the parent-child relationship around mealtimes. This dynamic can introduce stress and power struggles, linking nutrition directly to the child's emotional regulation and behaviour.

3.1.4.2. Health Considerations

A child's physical and psychological health status acts as a key external factor that either promotes or hinders optimal development. During early childhood, the crucial factors that impact a child include managing acute illnesses, ensuring restorative sleep, and mitigating chronic stress.

- *Infectious diseases and chronic illnesses*: Infectious diseases like pneumonia, diarrhoea, and respiratory infections are prevalent in early childhood due to immature immune systems and group settings like daycare. Chronic illnesses, including asthma and diabetes, impose ongoing energy demands and treatment regimens that can hinder motor skill acquisition, school attendance, and cognitive focus if unmanaged.
- *Restorative sleep*: Consistent sleep is a biological imperative that restores the nervous system. Sufficient sleep (typically 10-13 hours) is essential during this period for memory consolidation and strengthening of neural connections. Consequently, chronic sleep deprivation is a well-documented factor contributing directly to deficits in executive function (planning and inhibition) and attentiveness in the classroom. Restorative sleep also enables effective mood regulation. Children with inadequate sleep often exhibit increased irritability and impulsivity.
- *Psychosocial stress and behavioural dynamics*: Chronic environmental stress, such as family conflict, activates the physiological stress response, leading to the persistent release of hormones like cortisol. This constant activation diverts essential energy resources away from growth and neurological development, thereby compromising immune function and demonstrating how psychosocial factors translate directly into biological risks.

Recap

- ◆ Childhood spans ages two to twelve, marked by steady, gradual growth.
- ◆ The period includes early childhood (3–6 years) and middle childhood (7–11 years).
- ◆ Gross motor skills (running, throwing) are refined for coordination and balance.
- ◆ Fine motor skills (writing, cutting) require improved hand-eye coordination.
- ◆ Developmental tasks include self-care, school readiness, and emotional regulation.
- ◆ Self-care tasks include dressing, eating, grooming, and hygiene.

- ◆ Play enhances physical practice, creativity, rule learning, and teamwork.
- ◆ Structured games build motor coordination and strategic thinking.
- ◆ Heredity dictates physical stature and the timing of biological maturation.
- ◆ Myelination must reach a required point for complex coordinated movements.
- ◆ Nutrition (protein, calcium, iron) is vital for muscle and skeletal development.
- ◆ Chronic iron deficiency can lead to fatigue and reduced physical activity.
- ◆ Proper endocrine function is crucial for development.
- ◆ Experience-dependent plasticity emphasises that motor skills require active practice.
- ◆ Self-efficacy (belief in one's ability) is a powerful driver of motor skill persistence.
- ◆ Cultural expectations influence children's participation in physical activities.
- ◆ Intrinsic motivation leads to more consistent practice than extrinsic rewards.
- ◆ School readiness involves cognitive, physical, emotional, and social preparedness.
- ◆ Phonological awareness and letter recognition are key cognitive readiness skills required as part of school readiness.
- ◆ Emotional regulation is essential for adapting to classroom social demands.
- ◆ Malnutrition (under-nutrition) can lead to stunted growth and lethargy.
- ◆ Childhood obesity reduces stamina and mobility, discouraging active play.
- ◆ Chronic sleep deprivation impairs executive function and attentiveness.

Objective Questions

1. Name a gross motor skill typical of childhood.
2. Name a fine motor skill typical of childhood.
3. What concept explains improvement through repeated experience?
4. Which system controls hormones influencing growth?
5. What is the belief in one's ability to succeed called?



6. Which nutrient deficiency causes anaemia?
7. What condition describes excessive calorie intake?
8. What term describes fear of trying new foods?
9. What type of play includes imagination-based role acting?
10. Which domain covers balancing and postural control?
11. Which skill involves control of small muscles of hands?
12. What internal factor affects persistence and focus?
13. Which body function is compromised by iron deficiency?
14. What is the genetically regulated timeline for the nervous system to be ready for complex actions called?
15. Which system's development is primarily impaired by inadequate intake of calcium and vitamin D?
16. Which state is essential for memory consolidation and strengthening neural connections?
17. What are the minimum recommended hours of sleep for early childhood?
18. Name the process by which the bones become increasingly rigid and supportive.

Answers

1. Running
2. Writing
3. Experience-dependent plasticity
4. Endocrine system
5. Self-efficacy
6. Iron

7. Obesity
8. Neophobia
9. Pretend play / Imaginative play
10. Physical and motor domain
11. Fine motor skills
12. Attention
13. Oxygen delivery by blood cells
14. Maturation rate
15. Bone (or skeletal)
16. Restorative sleep
17. 10-13 hours
18. Ossification

Assignments

1. Describe the key developmental tasks of childhood across the motor skill development and self-care domains. Provide a distinct, real-world example for a child aged 6-8 for each task.
2. Analyse the critical influence of biological and environmental factors on motor skill development. Use the concept of experience-dependent plasticity to explain why varied practice opportunities are essential for skill refinement.
3. Describe the role of play in physical, cognitive, and social skill development.
4. Define school readiness and explain why it must be understood as a holistic developmental state rather than just an academic pursuit.
5. Describe the developmental impact of two major nutritional challenges in early childhood: malnutrition (undernutrition) and childhood obesity.
6. Explain the significance of micronutrient deficiencies (e.g., iron, iodine)



during childhood. How does chronic deficiency in a specific nutrient (e.g., iron) translate into cognitive and behavioural deficits?

7. Discuss the importance of restorative sleep and the mitigation of psychosocial stress in maintaining optimal health during childhood. Explain the biological consequences of chronic sleep deprivation or stress (cortisol) on a child's development.

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Unit 2

Cognitive Development in Childhood

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ explain the processes of conceptual development in childhood, focusing on assimilation and accommodation
- ◆ discuss the development of emotional and language abilities during childhood
- ◆ describe social development in childhood, with emphasis on peer relationships and socialisation
- ◆ discuss the progression of moral development in childhood

Prerequisite

Spend a few minutes watching children engaged in conversation or play, and you will notice something interesting: they are constantly trying to understand how the world works. They negotiate the rules of a game, invent explanations for events they do not yet fully grasp, and argue passionately about what is fair or unfair. They imagine possibilities that adults might not, tell stories that combine reality and fantasy, and ask questions that reveal how seriously they take the task of making sense of their experiences. Behind these everyday interactions lies the steady development of thinking, reasoning, language, memory, and problem-solving.

However, cognitive development does not happen in isolation. It grows through interactions with family, teachers, peers, and the cultural environment. A child who is encouraged to ask questions, explore, and express ideas develops differently from one who is expected only to follow instructions. Access to books, play materials, conversation, and emotional support shapes how children understand concepts, interpret social situations, and learn the difference between right and wrong. As you begin this unit, reflect on the many processes that work together when a child



learns a new word, resolves a conflict on the playground, or revises a mistaken idea. These moments suggest that cognition changes across childhood, establishing the foundation for later academic learning, social judgement, and moral reasoning.

Keywords

Cognition, Assimilation, Accommodation, Equilibration, Empathy, Language Acquisition, Phonology, Syntax, Pragmatics, Socialisation, Peer Relationships, Moral Reasoning, Prosocial Behaviour

Discussion

Cognitive development refers to the progressive changes in a child's thinking, reasoning, problem-solving, and understanding of the world. Childhood is a period during which children actively construct knowledge through interaction with their environment, gradually moving from simple sensory exploration to more complex logical thinking. These changes involve not only the acquisition of new information but also the refinement of mental structures that enable children to organise experiences, interpret events, and plan actions.

3.2.1. Conceptual Development

Conceptual development is the process through which a child forms and utilises concepts or mental categories to understand the world. These concepts range from simple, concrete categories, such as dog or ball, to abstract, complex ideas such as justice or velocity. Simply put, it is the fundamental mechanism by which children move beyond simple sensory input to systematically organise knowledge.

One of the most influential perspectives on how children develop these concepts comes from Jean Piaget, who proposed that cognitive development progresses as the continuous adaptation of internal schemas through the processes of assimilation and accommodation.

According to Piaget, children make sense of the world through schemas, which are organised patterns of thought or behaviour that help them interpret and respond to experiences. For example, a young child might develop a 'dog schema' that includes attributes like four legs, a tail, and fur after seeing their family dog. However, as children encounter new information, they must adapt their schemas to maintain cognitive balance. If the young child in the example above sees a 'cat' and calls it a 'dog', they must adapt their existing dog schema to create a new 'cat' category upon learning the differences between a dog and a cat.

Thus, Piaget proposed that conceptual development occurs through an ongoing, cyclical process of seeking cognitive equilibrium, or a balance between internal mental structures and external reality. The two primary processes driving this change are:

1. Assimilation
2. Accommodation

1. Assimilation

Assimilation refers to the process by which children integrate new experiences into existing schemas without substantially altering the existing schema. They interpret new information in terms of what they already know. For example, a child who has a schema for 'dog' (a four-legged, furry animal) may call a cow a 'dog' when first encountering it because the new animal fits their existing mental category of four-legged animals. In other words, the child attempts to understand the unfamiliar through familiar concepts. Alternatively, a child who has developed a schema for 'reading' by turning pages in picture books encounters a tablet for the first time and swipes or taps it, expecting pages to flip, integrating the device into their existing schema based on the interactive screen resembling familiar visuals.

2. Accommodation

Accommodation is the cognitive process of modifying or creating new mental structures (schemas) to fit new experiences. It occurs when the existing schema is insufficient or incorrect for understanding the latest information, forcing the child to adjust their schemas to better fit the world, enabling a more accurate understanding and cognitive growth. For example, a child who has a schema that all birds can fly may encounter a penguin and realise it cannot fly. To accommodate this new information, the child modifies their bird schema to include flightless birds, such as penguins, thus expanding their understanding of what birds can be.

The continuous cycling between assimilation and accommodation leads to conceptual acquisition, the construction and refinement of mental structures known as schemas. These schemas, which are organised patterns of thought or action used to represent and interpret experiences, help the child organise categories of knowledge and the relationships among them.

The interplay between assimilation and accommodation is guided by *equilibration*, which is the drive toward stable understanding. When children encounter information that challenges their existing schemas, they experience cognitive imbalance or disequilibrium, motivating them to reorganise knowledge until equilibrium is restored. This cycle drives cognitive development throughout childhood.

Conceptual acquisition, thus, is not passive but driven by the child's active exploration and intellectual challenge. New information that causes disequilibrium, the state in which existing schemas fail to explain an observation, compels the child to engage in accommodation, leading to the acquisition of a more advanced and nuanced concept.



3.2.1.1. Conceptual Development Beyond Piaget's Explanation

While Piaget emphasises the self-driven construction of concepts, later research highlights additional influences.

- *Language and Social Interaction*

Lev Vygotsky's sociocultural theory emphasises that children's conceptual growth is fundamentally a social process mediated by language and interaction with others. Concepts do not form in isolation but are built through collaborative dialogues and guidance from *more knowledgeable others*, such as parents, teachers, or peers.

- *Information Processing Perspective*

The Information Processing perspective views the child's mind as a system, similar to a computer, focusing on how children acquire, store, retrieve, and use information to form concepts. Accordingly, conceptual efficiency is directly tied to developmental improvements in key cognitive functions.

- *Experience and Exposure*

This perspective highlights the critical role of the environment and culture in determining what concepts are formed and how deeply they are understood. According to this perspective, conceptual knowledge is built through repeated interaction and contextual relevance.

3.2.2. Emotional Development in Childhood

Emotional development refers to the growth of a child's capacity to experience, express, and understand their own feelings and the feelings of others, as well as their increasing ability to regulate these emotions. This development is crucial because it governs social interaction, self-concept, and the capacity for attentiveness and learning.

During childhood, emotions become more differentiated, complex, and socially guided, contributing to children's sense of self, relationships, and psychological well-being. Emotional development, thus, plays a crucial role in shaping personality, social competence, and academic success.

3.2.2.1. Key Components

The process of emotional development during childhood involves significant mastery in three key, but interconnected areas.

1. Emotional Expression

This is the ability to communicate internal feelings through facial expressions, voice, and gestures. Early childhood involves refining basic emotions, such as joy, anger, and fear, and acquiring self-conscious emotions, such as guilt, shame, and embarrassment, which emerge as the child develops a sense of self and awareness of social standards.

2. Understanding of Emotions

This involves the growing cognitive ability to interpret the meaning of emotional cues in others and oneself, and to understand the link between emotions and situations. This progresses from recognising simple external cues to understanding that two conflicting emotions can be experienced simultaneously, such as being happy to go on a trip while sad to leave the pet. At this stage, children also understand that different people may experience different feelings in the same situation.

3. Emotional Regulation

Emotional regulation is the ability to manage emotional responses according to situational demands. This includes the capacity to manage and modify the intensity and duration of emotional reactions, especially negative ones, to achieve goals or comply with social expectations. This period marks the shift from young children relying solely on external support, such as comfort from adults, to developing strategies for emotional regulation, including distraction, problem-solving, and using language to express needs. A child who takes deep breaths instead of crying when frustrated demonstrates the development of emotional regulation.

In addition to these three cardinal aspects of emotional development, children also develop the following emotional competencies:

- **Development of Empathy and Prosocial Behaviour**

Empathy involves the ability to understand and respond to the feelings of others, leading to prosocial behaviours such as sharing, comforting, and helping. For example, offering a toy to a crying peer reflects empathetic concern and social understanding.

- **Attachment and Emotional Security**

Secure attachment with caregivers forms the foundation of emotional development, providing a sense of safety and support as children explore their environment. Responsive caregiving fosters trust, autonomy, and emotional resilience. For instance, children with secure attachment are usually more confident in trying new tasks and typically better at coping with challenges.

3.2.2.2. Developmental Milestones

Emotional development follows a predictable progression tied to cognitive growth:

- **Early Childhood (Ages 3–6)**

Children start to understand the causes and consequences of emotions, such as he *she* is angry because I took her toy. Emotional regulation shifts from external (comfort from a parent) to internal, such as using language or distraction to calm down.

- **Middle Childhood (Ages 6–12)**

Children develop emotional scripts and understand that people can mask their true feelings. They grasp that moral judgment and empathy are linked to understanding another person's emotional state. For example, a child may pretend to be happy about



sharing their new toy with a cousin, even though they feel annoyed, because they know it is expected behaviour in the family.

3.2.2.3. Importance of Emotional Regulation in Development

Emotional regulation is perhaps the most critical factor linking emotional development to overall competence. It relies heavily on the maturation of the prefrontal cortex, which is responsible for executive function.

- *Adaptive functioning*: Children who can regulate their emotions effectively are better able to concentrate in the classroom form stable peer relationships and persist in challenging tasks .
- *Parental and social influence*: Regulation is initially learned through social referencing and the quality of the parent-child relationship. Caregivers who acknowledge and help label the child's feelings foster better self-regulation skills than those who dismiss or punish emotional displays.

3.2.3. Language Development

Language development in childhood refers to the process by which children acquire the ability to comprehend and use both spoken and written forms of language, enabling communication.

It is one of the most significant aspects of cognitive development, as language functions as the primary symbolic tool that facilitates higher-order thinking, social interaction, and conceptual understanding. Language skills expand rapidly in childhood, progressing from simple sounds and gestures to the ability to use complex sentences, organise thoughts into narratives, and acquire literacy skills.

3.2.3.1. Core Components of Language

Language development requires children to simultaneously acquire and integrate several different but fully connected systems of rules:

a. Phonology

This is the sound system of a language, governing the structure, sequence, and distribution of phonemes (the smallest units of sound, such as the sound /p/ in 'pat' or /b/ in 'bat'). Language development in childhood involves acquiring the ability to both distinguish these distinct sounds and correctly pronounce and understand the rules for combining them to form words.

For example, a young child might say 'nana' for 'banana' because they have not yet acquired the phonological rule that allows a different consonant sound to begin the word.

b. Semantics

Semantics is the component of language focused on meaning, specifically the meaning of words, word combinations, and the concepts they represent (vocabulary). Children

exhibit extraordinary semantic growth, highlighted by the rapid increase in their vocabulary, beginning around 18 months. They actively link words to concepts, initially making errors like *overextension* (calling all four-legged animals ‘dog’) or *underextension* (using ‘car’ only for the family car). Semantic progress continues as the child refines these concepts, expanding them to include abstract ideas and nuanced meanings.

c. Morphology

Morphology is the internal structure of words. This system governs how meaningful parts, known as morphemes (the smallest units of meaning, like prefixes, suffixes, or root words), are combined. Children acquire both *free morphemes* (words that can stand alone, like *cat* or *go*) and *bound morphemes* (morphemes that must be attached to a word, like the plural *-s* or the past tense *-ed*). A classic sign of this development is overregularisation, where a child incorrectly applies a morphological rule to an irregular word, such as saying “I goed” instead of “I went,” demonstrating that they have acquired the general *-ed* rule but have not yet learned the specific exception.

d. Syntax

Syntax is the system of rules for combining words into grammatically correct and meaningful phrases and sentences. It dictates the acceptable order of words and the construction of various sentence types in a language. Understanding of syntax begins with single-word utterances, progresses to simple two-word phrases known as telegraphic speech, such as “Daddy go”. Children then rapidly expand their syntactic knowledge, acquiring complex grammatical structures, such as questions, negatives, and subordinate clauses, demonstrating a growing command of the intricate rules that govern sentence structure in their language.

e. Pragmatics

Pragmatics is the system governing the appropriate and effective use of language in social and conversational contexts. Pragmatic competence involves learning the social rules of communication, such as taking turns in a conversation, adjusting one’s speech style based on the listener, such as using simpler words when talking to an infant; and understanding non-literal language, such as sarcasm or understanding implied meaning.

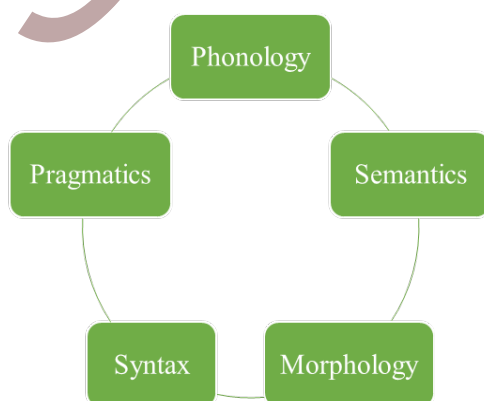


Fig. 3.2.1. Core Components of Language

3.2.3.2 Stages of Language Development

Language acquisition follows a universal and predictable course of development, yet is shaped by the mutual influence of the child's biological maturation and the nature of the environment they belong to. This process progresses through distinct stages, beginning in infancy and becoming increasingly complex as childhood advances. While the *pre-linguistic* and *linguistic (holophrastic or one-word)* stages are characteristic of infancy, subsequent development involving two-word speech, telegraphic speech, and complex language defines the progression throughout childhood.

a. Two-Word Stage (18-24 months)

This stage marks the onset of grammar in children's language use. They begin combining two words into simple, grammatically primitive phrases that follow a basic word order. The phrases typically express core semantic relationships, such as action and object (*throw ball*), possessor and possession (*daddy shoe*), or noun and action (*dog run*). Although the phrases lack function words (like *the* or *is*), this stage demonstrates the child's initial, rule-governed grasp of sentence structure.

b. Telegraphic Stage (2-3 years)

Sentences become longer, but a telegraphic style characterises the child's speech. That is, it contains only the essential content words, such as nouns and main verbs, necessary to convey meaning and omits grammatical function words, articles, prepositions, or auxiliary verbs. For example, a child might say "Mamma eat apple" to mean their mother is eating an apple, omitting the auxiliary verb 'is' and the article 'an', while focusing on the essential nouns and main verb. However, this period reflects the rapid refinement of syntax as the child attempts longer strings of words. It also marks the active acquisition of early morphological rules, evidenced by the child beginning to attach grammatical endings, although often incorrectly.

c. Complex Language (3 years and above)

Language acquisition during this period becomes increasingly sophisticated and abstract, closely resembling adult speech patterns. Vocabulary continues to expand rapidly, moving beyond concrete nouns and verbs to include more abstract concepts and relational terms. There is rapid development of pragmatic skills, allowing for effective social communication, such as telling coherent narratives or stories, adjusting speech to different listeners, and understanding non-literal language.

3.2.3.3. Theoretical Perspectives on Language Acquisition

a. Behaviourist Perspective

The behaviourist perspective represents the classic nurture-based explanation for language acquisition. It views language not as a specialised cognitive faculty, but as a form of verbal behaviour acquired through general learning mechanisms. There are no specialised innate language mechanisms.

The behaviourist perspective, thus, suggest that children acquire language by associating sounds and words with reinforcement. The child first *imitates* the sounds and words they

hear from caregivers. When a child babbles a recognisable word, such as ‘ma-ma’, the caregiver responds positively, for example, by smiling, repeating the word, or giving attention. This positive reinforcement increases the likelihood that the child will use the sound or word again, thus shaping their verbal repertoire.

However, the behaviourist model’s failure to adequately account for grammar and novelty in children’s patterns of language acquisition paved the way for Chomsky’s nativist perspective, setting the stage for the major theoretical debate in the field.

b. Nativist Perspective

Moving beyond the behaviourist emphasis on the environmental influence on language acquisition, the nativist perspective, primarily advanced by Noam Chomsky, is the dominant nature-based theory in language acquisition. This perspective fundamentally asserts that human language ability is innate and biologically determined, arguing that language is too complex, acquired too rapidly, and competency formed despite the often ungrammatical input children receive to be explained by simple learning principles alone. Chomsky proposed that humans are born with a specialised mechanism, the *Language Acquisition Device* (LAD), which contains a universal grammar and a set of abstract underlying principles common to all languages. When a child hears their native language, the LAD operates by parameter setting, using input to activate the specific grammatical rules of that language, which guide the rapid construction of grammar. This view is supported by evidence such as the existence of a critical or sensitive period for language learning, the universal sequencing of developmental milestones across cultures, and children’s consistent application of rules in errors, such as over-regularisation.

c. Interactionist Perspective

The interactionist perspective offers a balanced and comprehensive view, contending that language acquisition results from the complex and dynamic interaction between a child’s inherent biological capacity and their social environment. This perspective moves beyond the strict nature *versus* nurture debate, arguing that neither internal mechanisms nor environmental input alone is sufficient. Language acquisition is primarily driven by the human need for communication and social connection, and it develops within a supportive linguistic context. This view integrates cognitive readiness (the child’s evolving mental processing skills) with social scaffolding (support from caregivers). Acquisition occurs as the child uses their innate cognitive machinery to make sense of the patterned, supportive linguistic input provided by responsive adults, thus accounting for both the biological predisposition and the significant variability tied to the frequency and quality of social input.

3.2.4. Social Development

Social development in childhood concerns the progressive acquisition of knowledge, skills, and values that enable children to interact effectively with others and function as competent members of society. This involves understanding social rules, developing a sense of self, and learning to interact with others, particularly the peers.



While early social learning occurs primarily within the family, childhood marks a significant shift towards expanding social worlds, where peers become increasingly influential. Peer groups offer unique developmental experiences that cannot be fully replicated within the adult–child context, shaping children’s interpersonal understanding, identity formation, emotional regulation, and sense of belonging.

It is within these peer interactions that children learn cooperation, competition, negotiation, conflict resolution, and reciprocity, which are abilities that form the foundation of healthy social functioning. The process of becoming a socially competent individual occurs through *socialisation*, the mechanism through which cultural norms, values, and expected behaviours are internalised.

3.2.4.1. Socialisation

Socialisation is the process through which children internalise culturally valued norms, behaviours, roles, and communication patterns. It is supported by multiple agents, such as family, school, community, media, and, importantly, peers.

Mechanisms involved in socialisation include:

- *Observation and modelling*, which involves learning by watching others, particularly peers, and seeing the consequences of their actions. A child learns acceptable behaviour by imitating actions that result in positive outcomes, such as praise, and avoiding actions that lead to adverse outcomes, such as punishment.
- *Role-taking*, which enables the child to adopt another person’s perspective, helping them anticipate others’ feelings or reactions, thus fostering empathy and self-regulation of social behaviour.
- *Communication and shared meanings*, which involve the use of language and interaction norms to transmit cultural knowledge and values through verbal and non-verbal exchanges. Children learn the definitions of social situations, the expected behaviours, and the shared meanings that bind a community together.

3.2.4.2. Peer Relationships

Peer relationships refer to the child’s voluntary and reciprocal interactions with children of similar age or developmental level. These relationships evolve in complexity across childhood, moving from momentary and activity-based companionship in early childhood to more stable, emotionally meaningful friendships in later childhood. Peer relationships provide a unique context for learning skills that differ significantly from those learned within the family.

Key developmental contributions of peer relationships include:

- *Perspective-taking and empathy*: Interaction with peers is vital as it demands an understanding of others’ thoughts and emotions, thereby fostering the empathy required for successful social engagement. For example, successfully navigating a shared activity requires a child to recognise and respect a friend’s differing feelings about the rules.

- *Development of self-concept*: Feedback from peers shapes a realistic sense of their strengths and limitations. For example, a child learns they are skilled at drawing but need practice in sports based on direct comparison and communication within the group.
- *Social problem-solving skills*: Disagreements and conflicts within the peer group necessitate the development of crucial skills in negotiation, compromise, and conflict resolution.
- *Moral understanding*: Peer groups provide the primary context where abstract moral concepts such as fairness, justice, and reciprocity are actively practised and internalised as rules for social conduct. For example, the rules and expectations enforced by the peer group, such as “you share your toy since I have shared mine,” solidify abstract moral principles in the child.

Peer interaction plays a significant role in the development of social competence, which is the ability to engage appropriately and effectively with others. Socially competent children are more likely to:

- build stable friendships,
- experience acceptance within peer groups,
- demonstrate emotional regulation,
- achieve better academic and psychosocial outcomes.

Conversely, peer rejection and social isolation can pose developmental risks, such as internalising problems leading to anxiety or low self-esteem, or externalising behaviours leading to aggression and conduct issues.

3.2.5. Moral Development in Childhood

Moral development refers to the process through which children acquire the principles, values, and reasoning abilities that enable them to distinguish right from wrong, act ethically, and regulate behaviour in accordance with societal norms. It encompasses both the cognitive dimension (how children reason about moral issues) and the behavioural–emotional dimension (how they feel about moral decisions and how they act in morally significant situations). Childhood is a critical period for moral development, as children increasingly encounter situations requiring fairness, honesty, cooperation, and responsibility within family, school, and peer contexts.

3.2.5.1. Components of Moral Development

Moral development in childhood involves three key components:

- moral reasoning (reasoning about ethical issues)
- moral feeling (the emotional aspect, such as guilt or empathy)
- moral behaviour (the actions taken)



i. Moral Reasoning

Moral reasoning is the cognitive process by which one evaluates ethical dilemmas and decides whether an action is right or wrong. This process involves weighing competing values and considering the consequences of different choices. For example, a child engages in moral reasoning when deciding whether to tell the truth about a broken item, knowing they might get into trouble, or to lie to avoid punishment.

ii. Moral Feeling

Moral feelings are affective states, such as guilt, empathy, and shame, that motivate ethical behaviour and inhibit actions that would violate moral standards. These emotions connect a person's judgment to their actions. For example, empathy for a crying peer motivates a child to share their toy or offer comfort, demonstrating prosocial behaviour.

iii. Moral Behaviour

Moral behaviour is the actual conduct that reflects adherence to moral standards, which includes observable actions such as sharing, helping, or resisting temptation. This component is the outward manifestation of moral reasoning and feeling. For example, a child demonstrating moral behaviour would admit to drawing on the wall when asked by a parent, rather than blaming a sibling, thereby being honest and taking responsibility for their actions.

3.2.5.2. Theoretical Perspectives on Moral Development

a. Jean Piaget on Moral Development in Children

Jean Piaget studied children's games and rule-following behaviours to understand how moral reasoning changes during childhood. He proposed a theory focused on how children's developing cognitive capabilities (from preoperational to concrete operational thought) shape their understanding of rules and fairness. According to him, children move through two broad phases during this period:

- *Moral Realism Stage* (also referred to as Morality by Constraint or Heteronomous Morality Stage) (5-8 years): Children see rules as permanent, unchangeable, and imposed by authority figures such as parents and teachers. Judgements of right and wrong are based mainly on consequences rather than intentions. For example, accidentally breaking fifteen cups is considered more problematic than deliberately breaking one cup.
- *Autonomous Morality* (or Morality by Cooperation or Reciprocity) (8-12 years): Children begin to understand that rules are created through mutual agreement, are flexible, and depend on the specific situation. Intentions behind actions are considered more important than consequences. For example, a child who used to believe that accidentally breaking a toy was worse than deliberately scratching it now understands that the deliberate act is morally worse because of the malicious intent.

b. Kohlberg's Theory of Moral Development

Lawrence Kohlberg built upon Piaget's work, proposing a more detailed, sequential model of six stages organised into three levels of moral reasoning, two of which are typically observed during childhood adolescence. He studied moral development by presenting participants with moral dilemmas, such as the Heinz dilemma, and analysing the reasoning behind their choices.

Heinz Dilemma

The Heinz dilemma is a hypothetical moral problem used by psychologist Lawrence Kohlberg to study moral development. Kohlberg used this scenario to explore different stages of moral reasoning: pre-conventional, conventional, and post-conventional.

The scenario is:

Heinz's wife is very ill and needs a particular drug to survive. The drug is available in a pharmacy, but it is very expensive, and Heinz cannot afford it. Should Heinz steal the drug to save his wife's life?

The three levels and the stages within are as follows:

1. Pre-conventional Level
 - Stage 1: Obedience and Punishment
 - Stage 2: Self-interest
2. Conventional Level
 - Stage 3: Good Boy/Good Girl
 - Stage 4: Law and Order
3. Post-conventional Level
 - Stage 5: Social Contract
 - Stage 6: Universal Ethical Principles

The *pre-conventional* level, typical of most children, dictates that morality is based on external consequences. Rules are followed either to avoid punishment or to gain rewards. For example, a child avoids cheating simply because they fear getting caught and penalised.

The *conventional level*, characteristic of adolescence, dictates that morality is based on upholding social laws and fulfilling one's duty to maintain social order. For example,



an individual returns a lost wallet because they believe society relies on respect for property and maintaining the law.

The *post-conventional level* involves abstract ethical principles and recognising universal human rights. It dictates that morality is based on self-chosen, abstract ethical principles that may transcend or conflict with specific societal laws. For example, an individual might protest an unjust law because their personal principle of universal human rights outweighs their obligation to obey that particular law.

While Kohlberg's model outlines several stages across the lifespan, only the first two stages (pre-conventional level) apply to childhood.

Stage 1: Obedience and Punishment Orientation

In this first stage, an action is judged right or wrong solely based on its physical consequences and the likelihood of punishment. Rules are seen as fixed, absolute, and handed down by superior authorities, such as parents or teachers, that must be obeyed without question. An act is considered wrong if it leads to punishment, regardless of the intentions behind it. For example, a young child may refrain from taking a forbidden cookie from the jar only because their parent previously punished them for doing so. Similarly, a student may follow the teacher's classroom rules to avoid being punished.

Stage 2: Self-Interest Orientation

As the individual moves into the second stage, their moral focus shifts from avoiding punishment to satisfying their personal needs and receiving rewards. They recognise that people have different interests and use this understanding to pursue their own self-interest. Morality becomes a practical, transactional exchange, often summarised as the “*What is in it for me?*” position. For instance, a child may share their toys with a friend only because they expect the friend to share snacks later, or they may complete chores in return for extra screen time. Similarly, a child may willingly get ready early for school because the parent promises a chocolate or an outing afterwards.

Recap

- ◆ Childhood involves progressive cognitive growth.
- ◆ Children actively construct knowledge through environmental interaction.
- ◆ Conceptual development involves forming mental categories to understand the world.
- ◆ Piaget: schemas guide interpretation and response to experiences.
- ◆ Assimilation: integrating new information into existing schemas.
- ◆ Accommodation: modifying schemas to fit new experiences.
- ◆ Equilibration drives cognitive balance.
- ◆ Conceptual acquisition is active and self-driven.



- ◆ Language and social interaction enhance conceptual growth (Vygotsky).
- ◆ Experience and environment shape concept formation.
- ◆ Emotional development involves the development of emotional expression, understanding, and regulation.
- ◆ Early childhood: basic and self-conscious emotions emerge.
- ◆ Middle childhood: emotional scripts, empathy, and moral judgment develop.
- ◆ Emotional regulation supports attention, social relationships, and goal achievement.
- ◆ Language development enables communication, symbolic thinking, and social interaction.
- ◆ Core components of language: phonology, semantics, morphology, syntax, pragmatics.
- ◆ Linguistic stages: two-word, telegraphic, and complex language.
- ◆ Social development involves acquiring skills for effective interaction.
- ◆ Socialisation occurs *via* observation, role-taking, and communication.
- ◆ Peer relationships foster empathy, self-concept, problem-solving, and moral understanding.
- ◆ Moral development includes reasoning, feeling, and behaviour.
- ◆ Piaget: moral realism and autonomous morality stages.
- ◆ Kohlberg: three levels (preconventional, conventional, and postconventional), and the pre-conventional level includes obedience/punishment and self-interest stages.

Objective Questions

1. Who proposed the concept of schemas?
2. What process integrates new information into existing schemas?
3. What process modifies schemas to fit new experiences?
4. What is the drive towards cognitive balance called?
5. Vygotsky emphasised which factor in conceptual growth?



6. Name the three key aspects of emotional development.
7. What is the ability to manage emotional responses called?
8. Early self-conscious emotions include?
9. Empathy leads to which behaviour?
10. What does language development primarily support?
11. What is the smallest unit of sound in language?
12. Which component of language is focused on meaning?
13. Which component of language provides the internal structure of words?
14. Name the system of rules for combining words into grammatically correct and meaningful phrases and sentences.
15. Which language component governs the appropriate and effective use of language in social and conversational contexts?
16. Name the moral development component that links reasoning and action.
17. What is the first stage of moral development according to Piaget?
18. What is the second stage of moral development according to Piaget?
19. Name the three levels of moral development according to Kohlberg's theory.
20. According to Kohlberg, what are the two stages under the pre-conventional level of moral development?

Answers

1. Jean Piaget
2. Assimilation
3. Accommodation
4. Equilibration

5. Social interaction
6. Expression, Understanding, Regulation
7. Emotion regulation
8. Guilt, Shame
9. Prosocial
10. Communication
11. Phonemes
12. Semantics
13. Morphology
14. Syntax
15. Pragmatics
16. Moral behaviour
17. Moral realism
18. Autonomous morality
19. Preconventional, conventional, and postconventional
20. Obedience-punishment and self-interest orientation

Assignments

1. Elaborate on Piaget's theory of conceptual development. Describe how the processes of assimilation, accommodation, and equilibration interact to drive cognitive growth.
2. Define emotional development in childhood. Describe the progression of the three key components: emotional expression, understanding of emotions, and emotional regulation.
3. Describe the five core components of language: phonology, semantics,



morphology, syntax, and pragmatics. Provide a distinct example of a child's linguistic error for each of the first three components.

4. Compare and contrast the behaviourist and nativist (Chomsky) perspectives on language acquisition. What limitations of the behaviourist model did the nativist view attempt to address?
5. Define socialisation. Discuss how peer relationships contribute uniquely to a child's social development, focusing on the concepts of perspective-taking and social problem-solving skills.
6. Describe the two stages of Kohlberg's preconventional level of moral reasoning, which are typical of childhood.

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**BLOCK
4**

Adolescence

Unit 1

Physical and Motor Development in Adolescence

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ♦ explain the major developmental tasks of adolescence
- ♦ discuss puberty, including physical growth patterns and hormonal influences, and their implications for adolescent development
- ♦ evaluate the biological, environmental, and socio-cultural factors that influence physical and motor development in adolescents

Prerequisite

The period of adolescence can be recognised by the visible changes that appear almost suddenly, such as an increase in height, a deepening voice, or the growing awareness of one's own body. It is a period when growth seems to accelerate, and young people may feel as if their bodies are changing faster than they can understand. The same individual who recently appeared childlike may now appear physically mature, with increased strength, stamina, and new motor skills that enable greater participation in sports, physical challenges, and demanding activities. These changes are not random; they are part of a coordinated biological process driven by puberty-related hormonal changes that reshape the body and its capabilities.

However, the physical transformation of adolescence is not just biological growth. Rather, it brings questions, uncertainties, and tasks that every young person must navigate. How do adolescents adjust to changes in appearance and physical ability? What influences whether development is smooth or stressful? Nutrition, exercise, health conditions, family support, cultural expectations, and opportunities for physical activity all shape how adolescents experience and interpret their developing bodies. Some feel confident and capable, while others may struggle

with discomfort, comparison, or confusion about identity and sexuality. As you enter this unit, reflect on how physical and motor development during adolescence affects not only strength and coordination but also self-image, participation in peer groups, and readiness for adulthood. Reflecting on these aspects will enable you to see why adolescence is both a period of remarkable potential and significant vulnerability.

Keywords

Puberty, Identity Formation, HPG Axis, Hormones, Gonadotrophins, Body Image, Sexual Identity, Endocrine-Disrupting Chemicals

Discussion

Adolescence is the transitional period between childhood and adulthood. It typically spans ages 10 to 21, although its onset and completion are more dependent on psychological maturity and social context than on chronological age. The period is often divided into three phases:

- *Early Adolescence* (10–14), dominated by rapid physical changes associated with the onset of puberty.
- *Middle Adolescence* (15–17), characterised by identity exploration and peer involvement.
- *Late Adolescence* (18 and beyond), marked by movement toward autonomy and a clear focus on future orientation.

4.1.1. Developmental Tasks

Developmental tasks during adolescence refer to the skills, abilities, and psychological adjustments that individuals are expected to acquire as they transition from childhood to adulthood. These tasks emerge in response to rapid physical changes, expanding cognitive abilities, increasing emotional complexity, and broader social expectations. Successfully mastering these tasks, despite the challenges such as peer pressure, identity confusion, emotional volatility, and future uncertainty, is crucial for establishing a healthy adult identity and functioning.

i. Physical and Motor Development

During adolescence, the body undergoes transformative changes driven by the onset of puberty. Puberty, which is the complex biological process of physical maturation during



which an individual attains sexual maturity and becomes capable of sexual reproduction, is initiated by a surge of sex hormones. This leads to a period of rapid, non-uniform growth, characterised by significant increases in height and weight, substantial improvement in muscle strength, and the development of adult-like body proportions. Consequently, motor skills become more refined and efficient, resulting in increased coordination, endurance, and precision. For example, the increasing muscle strength and fine motor control developed during this period allow a teenager to execute complex, multi-step sequences, such as dancing or performing an advanced gymnastic routine. Fine motor dexterity also improves, enabling proficiency in tasks such as playing instruments, sketching, and laboratory work.

ii. Adjusting to Pubertal Changes and Sexual Maturation

A major developmental task in adolescence is the acceptance of and adaptation to the bodily changes associated with puberty. Adolescents must internalise and interpret the growth of primary and secondary sex characteristics, changes in body shape, hormonal fluctuations, and emerging sexual feelings. This period involves forming a stable understanding of one's sexual identity and orientation, as well as developing responsible and healthy attitudes toward sexuality and intimate relationships. For example, an adolescent actively learning to manage and understand new physical and emotional realities, such as adjusting to an accelerated rate of physical growth, a voice change, or the onset of menarche (first menstruation), demonstrates the successful psychological process of adapting to biological maturation and integrating a mature body image into their sense of self.

iii. Developing Advanced Cognitive Abilities

Adolescents develop advanced thinking abilities, a change characterised by the shift from concrete to formal operational thought in Piagetian terms. This includes the emergence of abstract reasoning, hypothetical thinking, and enhanced problem-solving abilities. They develop the capacity to evaluate information critically, reflect on different viewpoints, and understand long-term consequences. As a result, they begin to actively form and consolidate their personal beliefs, values, and goals. An example would be a teenager who systematically weighs the advantages and disadvantages (pros and cons) before choosing specialised subjects for higher education or analysing potential career pathways demonstrates the expanding cognitive maturity characteristic of this period.

iv. Identity Formation and Emotional Understanding

Another central and defining developmental task in adolescence is establishing a coherent and resilient sense of identity. This involves attempting fundamental questions such as “Who am I?” and “What is my role within the social world?”. Concurrently, adolescents also learn to manage and express more intense and varied emotional states, strive to achieve appropriate emotional independence from their parents, and build solid, positive self-esteem. They actively explore different roles, experiment with various personal preferences and ideologies, and gradually consolidate these experiences into a stable, integrated self-image. For example, a teenager examining different political or religious perspectives, adopting ethical standards that may differ from those of their family, and incorporating these personally validated values into their daily decision-making process illustrates identity consolidation characteristic of this period.

v. Peer Relationships and Social Interaction

The adolescent's social world expands beyond the family, making the development of social competence a key task. This involves forming and maintaining close friendships, learning essential skills such as cooperation, loyalty, and effective navigation of group dynamics. Adolescents also begin forming meaningful relationships with peers of all genders and learn to communicate clearly and appropriately in various social settings. A group of teenagers collaborating on a school project, negotiating roles, resolving conflicts, and supporting each other's ideas, is an example of this developmental progress.

vi. Preparing for Career and Future Roles

Another task involves starting to explore academic interests and career possibilities. They begin to objectively evaluate their personal strengths, understand their limitations, and set concrete, achievable future goals. They also develop skills such as effective time management, individual responsibility, and decision-making, all of which are crucial for success in adult roles. For example, a teenager preparing for board examinations, or attempting pre-professional entrance exams, demonstrates an initial and critical phase of future orientation and early life planning.

vii. Moral Understanding and Behavioural Regulation

Adolescence is also marked by the development of deeper and more complex thinking about ethical issues. This includes concepts of right and wrong, social fairness, social responsibility, and personal values. Behavioural regulation also becomes more sophisticated as adolescents learn to control impulses, consider consequences, and navigate complex social expectations. For instance, a teenager who, based on their understanding of social fairness, consciously chooses to resist peer pressure to cheat on an exam or acts responsibly by intervening in a bullying situation demonstrates the integration of advanced moral judgment and behavioural regulation.

Havighurst's Developmental Task: Adolescence

- Achieving new and more mature relations with age-mates of both sexes
- Achieving a masculine or feminine social role
- Accepting one's physique and using one's body effectively
- Desiring, accepting, and achieving socially responsible behaviour
- Achieving emotional independence from parents and other adults
- Preparing for an economic career
- Preparing for marriage and family life
- Acquiring a set of values and an ethical system as a guide to behaviour – developing an ideology



4.1.2. Characteristics of Adolescence

Adolescence is a unique and significant stage of life, characterised by features that distinguish it from both childhood and adulthood. While developmental tasks describe what adolescents are expected to achieve, the following characteristics outline the general features and processes that define this stage of development, and provide the context for understanding the developmental patterns of this period.

i. Adolescence as a transitional period

Adolescence connects childhood with adulthood. This stage involves moving away from childhood dependence while not yet reaching adult maturity. Adolescents begin to make more independent choices and form their own opinions, though they still need support from parents, teachers, and other adults. The transitional choices made during this period, including the establishment of a personal identity, the adoption of key values, and the development of social and emotional coping behaviours, influence the individual's later approach as an adult.

ii. Adolescence as a period of change

Simultaneous transformations across all major developmental domains also characterise this period. There is rapid physical growth, increased hormonal activity, advanced cognition, and stronger emotions. Social relationships also shift, with adolescents relying more on peers and becoming more aware of their social environment. Because numerous changes co-occur, this period can feel both exciting and challenging.

iii. Adolescence as the threshold of adulthood

Adolescence is the threshold stage where individuals prepare for and commit to adult roles. Adolescents begin to consider their future, their goals, and the kind of person they want to become. They develop greater responsibility and decision-making skills. While the body may reach biological maturity earlier, emotional and social maturity continue to grow throughout this stage.

Having discussed the general features characterising the adolescent period, we now examine some of its key characteristics.

a. Puberty and Physical Changes

Puberty is the process of physical maturation, characterised by hormonal and bodily changes that lead to sexual maturity. This begins when the endocrine system becomes more active, releasing hormones that stimulate growth and development. Pubertal change manifests in two categories: primary and secondary sex characteristics. *Primary sex characteristics* involve the direct maturation of the reproductive organs. In males, this includes the growth of the testes and penis, culminating in *spermarche*, or the first ejaculation of semen. In females, it involves the maturation of the ovaries and uterus, culminating in *menarche*, the first menstruation. *Secondary sex characteristics* are visible external indicators of maturity, such as *thelarche* (breast development) and pelvic widening in females, and voice deepening, facial or body hair growth, and shoulder broadening in males.

b. Hormonal Influences

The onset of puberty is regulated by a finely tuned neuroendocrine feedback loop known as the Hypothalamic-Pituitary-Gonadal (HPG) axis. Puberty begins when the hypothalamus increases the secretion of Gonadotropin-Releasing Hormone (GnRH). The GnRH stimulates the pituitary gland to release the gonadotropins, Follicle-Stimulating Hormone (FSH) and Luteinizing Hormone (LH). These hormones, in turn, stimulate the gonads, which are the ovaries in females and the testes in males. In females, FSH and LH promote follicular development and trigger ovulation. The ovaries secrete oestrogen and progesterone, which drive the development of secondary sexual characteristics and regulate the menstrual cycle. In males, FSH supports sperm production, and LH stimulates the testes to produce testosterone, which promotes facial and body hair growth, deepening of the voice, and increased muscle mass.

The gonadal hormones, such as oestrogen, progesterone, and testosterone, not only drive the development of secondary sexual characteristics but also influence overall growth and neurological development during adolescence. For instance, oestrogen contributes to the growth spurt in females, promotes bone maturation, and affects fat distribution. Testosterone in males stimulates muscle growth, increases bone density, and contributes to the adolescent growth spurt. These hormones also interact with the brain, affecting mood, cognition, and social behaviour. For example, fluctuations in oestrogen and progesterone can influence emotional sensitivity and regulation in females, while rising testosterone levels in males may contribute to increased risk-taking and assertive behaviour.

c. Sexual Identity and Maturation

Sexual maturation is a complex process that integrates biological reproductive capacity with the psychological recognition and management of new sexual impulses. It extends beyond the physical capacity for reproduction. Central to this is the formation of sexual identity, which includes recognising and accepting one's sexual orientation (who one is attracted to) and understanding one's gender identity (one's internal sense of self as male, female, both, or neither). These processes are influenced by biological urges, cognitive advances such as the ability to think abstractly about oneself and the future, and the sociocultural context.

The sudden, visible physical changes necessitate continuous re-evaluation of the adolescent's body image, defined as their perception and evaluation of their physical appearance. Discrepancies between one's actual body and social ideals may lead to body dissatisfaction. However, supportive family and social environments help adolescents develop a healthy and realistic understanding of their bodies. Although biological maturity is mostly acquired during this period, emotional and social maturity continue to develop beyond this stage, further shaping responsible attitudes toward sexuality and relationships.

4.1.3. Factors Affecting Physical and Motor Development in Adolescence

During adolescence, young people often notice that their bodies and physical abilities change at different rates compared to their peers. Some develop strength, coordination,



and stamina early, whereas others may require more time to adapt to their growing bodies. These differences are not random but reflect a range of influences, such as the onset of puberty, the nutritional quality of their diet, the amount of sleep and physical activity they engage in, and the level of support and stability in their environment. What may appear as natural variation in physical or motor skills is often shaped by underlying factors that together influence the course of physical and motor development during adolescence. Understanding these influences helps explain why adolescents differ in their motor skills and physical readiness.

i. Heredity

Heredity plays a central role in determining physical development. Genes influence height, somatotype, the onset of puberty, and the overall pace of growth. Adolescents whose parents experienced early or late maturation are likely to show similar patterns. Genetic factors also contribute to muscular development, coordination, and susceptibility to specific health conditions that can affect physical growth. For example, heredity determines an individual's potential height and influences their somatotype. While environmental factors determine the extent to which this potential is realised, genetic factors establish the ceiling.

ii. Nutrition

Nutrition is one of the most vital factors affecting adolescent growth. Adequate intake of proteins, vitamins, minerals, and calories is essential for the rapid physical changes that occur during this stage. Malnutrition, poor dietary habits, or deficiencies in iron, calcium, or vitamin D can slow growth, reduce stamina, and impair motor performance. Balanced nutrition supports healthy bones, muscles, and energy levels necessary for physical activity. For instance, chronic malnutrition, particularly protein deficiency, can significantly delay the onset of puberty and stunt final height attainment.

iii. Physical Activity and Exercise

Regular physical activity strengthens muscles, improves coordination, and enhances overall motor development. Adolescents who participate in sports, outdoor games, or structured exercise routines tend to develop better balance, flexibility, and endurance. Limited physical activity, often due to sedentary lifestyles, excessive screen time, or limited access to safe play spaces, can adversely affect motor skills, physical fitness, and healthy weight management. However, while moderate exercise supports healthy development, excessive or intensive training combined with rigorous dietary restrictions can lead to a condition known as the *Female/Male Athlete Triad*, characterised by low energy availability, menstrual dysfunction in females, and low bone mineral density. This chronic energy deficit can disrupt the HPG axis, often resulting in delayed menarche and compromised bone development.

iv. Hormonal Influences

Hormones serve as the primary biological regulators of physical growth and motor skill maturation during adolescence. Growth hormone (released by the pituitary gland) and thyroid hormones are critical for overall skeletal growth and metabolic rate. Concurrently,

the sex hormones, testosterone (predominant in males) and oestrogen (predominant in females), drive sex-specific dimorphism. Variations or imbalances in these hormonal functions directly account for individual differences related to the onset of puberty, physical strength, and overall motor coordination. Exposure to certain endocrine-disrupting chemicals (EDCs), which are substances that mimic or interfere with the body's natural hormones, such as those found in plastics, can disrupt hormonal pathways, potentially leading to accelerated or aberrant pubertal progression.

v. Health and Illness

Chronic illnesses such as asthma, anaemia, diabetes, or hormonal disorders can divert energy resources and disrupt endocrine function, leading to delayed puberty or affect physical growth. Frequent infections, poor immunity, or untreated medical issues can also interfere with participation in physical activity and delay motor development. Adequate sleep is crucial, as growth hormone (GH) secretion typically occurs during deep sleep. Chronic sleep deprivation due to irregular routines, academic pressure, or excessive use of digital devices further reduces physical well-being and coordination.

vi. Emotional and Psychological Factors

Psychological well-being is not secondary but an integral determinant of healthy physical and motor development during adolescence. The relationship is bidirectional and psychosomatic, where internal states significantly influence physiological regulation and behaviour. Factors such as chronic stress, elevated anxiety, and persistent family conflict activate the body's stress response system, often leading to somatic manifestations like disruption of the sleep-wake cycle, reduced nutritional intake (appetite suppression), and the diversion of cognitive and emotional resources away from engagement. Consequently, these states often lead to sedentary behaviour, withdrawal from physical activity, and impaired development of complex motor skills. Conversely, a supportive microsystem characterised by stable relationships, positive parental encouragement, and affirmative peer support serves as a protective factor.

vii. Socioeconomic and Environmental Conditions

Living conditions, family resources, and community environments also influence adolescent growth. Optimal development is supported by adequate family resources and favourable community environments. Structural facilitators such as consistent access to nutritious food, timely medical and preventative care, access to sports facilities, and safe outdoor spaces directly enhance opportunities for healthy physical activity, skill refinement, and overall physiological health. In contrast, socioeconomic adversity, characterised by poverty, overcrowded housing, and unsafe neighbourhood environments, introduces significant structural barriers. These conditions often restrict access to quality healthcare and limit opportunities for spontaneous or organised physical activity, contributing to sedentary behaviour and nutritional deficiencies. Such environmental stressors can aggravate health disparities, ultimately restricting the adolescent's potential for robust physical and motor development.

viii. Cultural Practices and Societal Expectations

Cultural practices function as an influential filter, shaping both the opportunities for



physical development and the personal interpretation of one's changing body. Cultural expectations regarding body size, appearance, and physical maturity profoundly influence an adolescent's self-perception. These expectations, often disseminated through the media and peer groups, can shape health-related behaviours, such as diet and exercise patterns, sometimes leading to body dissatisfaction or the adoption of unhealthy practices to conform to an idealised, culturally defined physique. Additionally, in many cultures, gender norms dictate the appropriateness of specific physical activities. These social expectations often affect access to resources, resulting in differential participation in organised sports and engagement in unstructured outdoor play based on gender. This differential socialisation also leads to variations in motor skill development and physical competence between male and female adolescents.

Recap

- ◆ Adolescence is a transitional period between childhood and adulthood.
- ◆ Typically divided into early (10–14 years), middle (15–17 years), and late (18+) stages.
- ◆ Transitional Nature: Moving from dependence towards independent decision-making.
- ◆ Developmental tasks are skills and adjustments needed for healthy adult functioning.
- ◆ Physical growth is characterised by rapid, non-uniform increases in height and weight.
- ◆ Motor skills include significant improvements in coordination, endurance, and precision.
- ◆ Puberty is the biological process of reaching sexual maturity and reproductive capacity.
- ◆ Cognitive shift: Transition from concrete logic to abstract reasoning and hypothetical thinking.
- ◆ Identity formation: The central task involves answering “Who am I?” and establishing a self-image.
- ◆ Emotional autonomy: Striving for independence from parents and managing intense emotions.
- ◆ Peer influence: The social world shifts from family focus to peer groups and loyalty.
- ◆ Future orientation: Preparing for careers by evaluating personal strengths and goals.

- ◆ Moral growth: Developing a deeper understanding of social fairness and ethical standards.
- ◆ Development of primary and secondary sex characteristics.
- ◆ HPG axis as the neuroendocrine loop regulating pubertal onset *via* GnRH, FSH, and LH.
- ◆ Genetic factors determine the *ceiling* or potential for growth.
- ◆ Essential intake of proteins and minerals is required to prevent stunted growth.
- ◆ Exercise strengthens muscles, but excessive training can cause the athlete's triad.
- ◆ Sleep is crucial because growth hormone (GH) is secreted during deep sleep.
- ◆ Chronic conflict or stress can disrupt physiological regulation and sleep-wake cycles.
- ◆ Poverty creates structural barriers to nutrition and healthcare.
- ◆ Societal ideals and gender roles shape body image and activity levels.

Objective Questions

1. Which age range is commonly associated with adolescence?
2. What are the three phases of adolescence?
3. What physical changes characterise early adolescence?
4. How does motor development change during adolescence?
5. What cognitive stage emerges during adolescence according to Piaget?
6. How does adolescent thinking differ from childhood thinking?
7. Which life stage links childhood and adulthood?
8. Which phase of adolescence is marked by rapid pubertal change?
9. Which phase emphasises identity exploration?
10. Which phase focuses on autonomy and future planning?



11. Which biological process marks the onset of sexual maturity?
12. Which system regulates hormonal changes during puberty?
13. Which type of growth pattern is seen during adolescence?
14. Which developmental domain shows refined coordination and endurance during adolescence?
15. Which developmental task involves answering “Who am I?”
16. Which social group gains primary importance during adolescence?
17. Which skill develops through peer interaction and cooperation?
18. Which type of development involves understanding right and wrong?
19. Which reproductive milestone marks female puberty?
20. Which reproductive milestone marks male puberty?
21. Which physical features indicate sexual maturity externally?
22. Which hormonal axis initiates pubertal changes?
23. What is the self-evaluation related to the perception of one’s body called?
24. Which factor sets the biological limit of physical growth?
25. Which environmental factor ensures energy for rapid growth?

Answers

1. 10–21 years
2. Early, middle, late
3. Pubertal changes
4. Improved coordination
5. Formal operational thought

6. Abstract thinking
7. Adolescence
8. Early adolescence
9. Middle adolescence
10. Late adolescence
11. Puberty
12. Endocrine system
13. Non-uniform growth
14. Motor development
15. Identity formation
16. Peer group
17. Cooperation
18. Moral development
19. Menarche
20. Spermatarche
21. Secondary sex characteristics
22. HPG axis
23. Body image
24. Heredity
25. Nutrition



Assignments

1. Discuss the significance of viewing adolescence as a transitional period rather than just a chronological age.
2. Describe the biological feedback loop of the HPG axis and its role in physical maturation.
3. Evaluate the psychological challenges adolescents face when adapting to a mature body image.
4. Discuss the importance of identity consolidation during the middle and late phases of adolescence.
5. Explain the difference between primary and secondary sex characteristics, providing examples for both.
6. How do socioeconomic conditions and community resources act as structural barriers to motor development?

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SGOU



Unit 2

Cognitive Development in Adolescence

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ explain the major changes in cognitive functioning during adolescence and their influence on emotional regulation, language use, and social understanding
- ◆ examine the development of moral reasoning in adolescence and relate it to broader cognitive and social maturation processes
- ◆ analyse key psychosocial concerns of adolescence, including peer relationships, parent–adolescent dynamics of autonomy and connectedness, and their impact on identity and adjustment

Prerequisite

Adolescence is often described as a period during which young people begin to *think about life in new ways*. Questions that once seemed unnecessary or distant suddenly become important: *Who am I? What do I believe? Why do people expect certain things from me? What kind of person do I want to become?* These questions do not emerge from intense emotional experiences; rather, they reflect an adolescent now capable of reasoning more deeply, imagining possibilities, weighing alternatives, and evaluating consequences.

This shift in thinking marks a clear departure from childhood. Adolescents begin examining not only what they think but also how and why they think it. They begin to speculate about situations they have never personally experienced, challenge long-accepted ideas, and develop personal viewpoints on morality, relationships, and society. However, this new intellectual freedom also introduces tensions: the desire for independence coexists with the need for support, and the ability to judge risks does not always translate into choosing safety.

As peer relationships grow stronger and parent-adolescent dynamics change, thinking is influenced as much by social experiences as by intellectual development. A friend's approval may feel as important as logical reasoning, and emotional intensity often competes with prudent decision-making. The cognitive advances that promote reflection and ethical reasoning may also lead to idealism and heightened self-consciousness.

Understanding cognitive development in adolescence, therefore, involves exploring how thinking, emotion, and social context interact to shape choices, values, and identity. This unit invites learners to reflect on these transformations, both as observers of development and as individuals who have lived through, or are currently living through, this complex phase.

Keywords

Formal Operational, Hypothetico-Deductive Reasoning, Propositional Thinking, Metacognition, Identity Formation, Emotional Regulation, Limbic System, Emotional Autonomy, Pragmatics, Social Identity, Peer Relationships, Psychosocial Moratorium, Conventional Morality

Discussion

4.2.1. Cognitive Development in Adolescence

Adolescence represents a fundamental qualitative shift in cognition. In Piagetian terms, individuals in this stage move from the concrete operational thought characteristic of later childhood to the formal operational stage, in which reasoning is no longer tied to immediate, tangible experiences. This developmental advancement enables adolescents to engage with abstract concepts, reason about hypothetical situations, and consider possibilities that extend beyond the 'here and now.'

This period can be marked by a set of crucial cognitive shifts, including:

i. Hypothetico-Deductive Reasoning

Adolescents acquire the ability to formulate general hypotheses and deduce specific predictions that logically follow from these assumptions. This scientific mode of problem-solving allows them to identify multiple variables, explore alternative explanations, and approach tasks systematically rather than through trial and error. For example, when asked to determine what makes a pendulum swing faster, an adolescent can systematically vary



the string length, mass, and tension to test which factor matters, rather than guessing randomly.

ii. Propositional Thinking

Propositional thinking is the cognitive capacity that emerges in adolescence, enabling adolescents to evaluate the logical content of verbal statements (propositions) independent of real-world facts or circumstances. This marks a critical step in which the focus of thought shifts from the observable truth of a statement's content to the underlying validity of its form. This means that adolescents can judge whether a conclusion logically follows from a set of premises, even when those premises describe a fictional scenario or are contrary to known facts. For example, they can analyse a syllogism such as "If all insects can speak and butterflies are insects, then butterflies can speak" and recognise it as logically valid, even though the idea of speaking insects is factually untrue. This ability to analyse and critique the internal structure of an argument, independent of its content, is fundamental to advanced abstract reasoning in academic and ethical domains.

iii. Perspective Taking

The adolescent stage is also marked by significant expansion in perspective-taking abilities. This enables young people to move beyond self-focused viewpoints and recognise that individuals hold diverse perspectives shaped by their unique social contexts, past experiences, and cultural backgrounds. This cognitive skill is vital for achieving a more nuanced understanding of social dynamics and directly supports the development of both empathy and heightened interpersonal competence. For example, adolescents can now understand that a friend's emotional state, such as anger, may stem from underlying stress at home rather than being a direct reaction to the immediate situation, thus demonstrating the ability to consider and analyse multiple layers of another person's subjective experience.

iv. Metacognition

Metacognition, which in simple terms is the ability to think about one's own thinking, undergoes significant development during adolescence. This refers to the ability to monitor, regulate, and assess one's own cognitive processes. This allows adolescents to recognise errors in reasoning, adjust their methods, and apply more efficient approaches to learning and problem-solving. For example, an adolescent preparing for an examination may evaluate which study strategies are effective, modify ineffective ones, and allocate time based on an awareness of personal strengths and weaknesses.

v. Adolescent Egocentrism

Adolescent egocentrism refers to a cognitive tendency that emerges with the development of abstract thinking and metacognition. Although adolescents become capable of understanding multiple perspectives, they may simultaneously develop an exaggerated awareness of how they appear to others. This is reflected in two common patterns: the imaginary audience, the belief that others are constantly observing and evaluating them, and the personal fable, the sense that their experiences are unique and not fully understood by others. These cognitive tendencies contribute to heightened self-consciousness and may influence risk-taking, emotional intensity, and identity exploration during adolescence.

vi. Identity Formation

The process of identity formation, which is the search for a coherent and enduring sense of self, is the central psychosocial task of adolescence. This is enabled by the newly acquired cognitive capacities for abstract and reflective thought. The adolescent's ability for hypothetico-deductive reasoning extends inward, allowing them to explore a variety of 'possible selves'. According to Erikson's psychosocial theory, this extensive mental exploration is necessary to resolve the crisis of *identity versus role confusion*, where the individual must synthesise their diverse experiences (as a student, friend, and family member) into a single, cohesive identity. Critically, this cognitive ability to reflect on one's future and values permits a *psychosocial moratorium*, a time of experimentation with various identities and ideologies, which is a necessary prerequisite for achieving a stable and committed adult identity.

4.2.2. Emotional Development in Adolescence

Emotional development in adolescence is characterised by a significant increase in the intensity and range of emotional experiences, alongside the gradual maturation of the capacity for emotional self-regulation. This period of heightened emotionality is fundamentally linked to the uneven trajectory of brain development, in which subcortical regions, such as the limbic system, which is associated with emotion and reward, mature faster than the prefrontal cortex, which governs executive function and control. As adolescents encounter new physical, cognitive, and social demands, their emotional responses become more complex and differentiated. Thus, the emotional development during this period reflects an ongoing process of learning to understand, manage, and appropriately express emotions while moving towards greater emotional independence.

Some of the key features of emotional development in adolescence are discussed below.

i. Heightened Emotional Intensity

Driven by pubertal hormonal shifts and the rapid maturation of the limbic system, adolescents often experience emotions (both positive and negative) with greater intensity than children or adults. This heightened sensitivity, particularly to social stimuli and peer rewards, can sometimes lead to mood fluctuations and impulsive behaviours. For example, an adolescent may experience intense excitement and pride after succeeding in a creative project or a competitive activity, reflecting deeper emotional involvement.

ii. Complex Emotional Understanding

Concurrent with cognitive growth, adolescents gain the ability to comprehend and experience complex, mixed, and subtle emotions, such as feeling disappointed in a friend while simultaneously feeling empathy for them. Their advanced perspective-taking ability enables them to recognise that others' emotional states are often multi-layered and context-dependent, allowing them to move beyond simple, concrete emotional labelling.

iii. Development of Self-Conscious Emotions

With the ability for perspective-taking and metacognition, adolescents experience self-conscious emotions such as pride, guilt, embarrassment, and shame in more differentiated



ways. These play an essential role in guiding behaviour and social understanding. For example, an adolescent may feel pride in contributing responsibly to a group task or experience mild embarrassment after recognising a social mistake, using this awareness to adjust future behaviour.

iv. Improved Emotional Regulation

Emotional regulation, the capacity to monitor, evaluate, and modify the intensity and duration of emotional reactions, improves across the adolescent period. Early adolescence is often characterised by reliance on maladaptive or rudimentary strategies, such as behavioural suppression or externalising distress. However, as the prefrontal cortex and its connections to the limbic system continue to mature, typically extending into late adolescence and early adulthood, individuals gain greater access to cognitive reappraisal, enabling a sophisticated, adaptive strategy of reinterpreting an emotion-eliciting situation in a less emotionally charged way. This becomes key to achieving psychosocial adjustment and resilience.

v. Emotional Autonomy

Emotional autonomy is a crucial developmental task that signifies the transition from childhood dependence to adult self-reliance. It is defined as the adolescent's ability to develop an internal, independent sense of self that is less emotionally dependent on parental approval or validation. It involves three key aspects: *de-idealisation*, which entails seeing parents realistically as complex individuals; *non-dependency*, which entails not relying on parents to solve all emotional problems; and *individualisation*, which entails establishing personal emotional boundaries.

vi. Influence of Social Relationships on Emotions

Social relationships become the primary context for the most intense emotional experiences in adolescence. The heightened sensitivity to social cues, driven by brain changes, makes peer acceptance, rejection, and the dynamics of new romantic relationships powerful emotional catalysts. Positive and supportive peer relationships, particularly high-quality friendships, serve as critical sources of emotional support and help mitigate distress. Conversely, negative peer experiences, such as rejection or bullying, usually correlate with elevated levels of negative affect, such as anxiety and anger.

4.2.3. Language Development in Adolescence

Language development in adolescence involves the refinement and expansion of linguistic abilities rather than the acquisition of basic language skills. During this period, adolescents develop greater proficiency in vocabulary, syntax, and the pragmatic use of language, enabling them to express abstract ideas, emotions, and perspectives more effectively. These advances support academic learning, social interaction, and identity expression, as adolescents learn to adapt their language to different audiences and contexts.

The key features of language development characteristic of the adolescent period are discussed below.

i. Syntactic Development

Adolescents refine their mastery of syntax and morphology (word formation), enabling the routine use of highly complex and embedded grammatical constructions. For instance, adolescents frequently use sentences with multiple subordinate clauses, such as *the student who had studied diligently and felt confident approached the exam*. This reflects their enhanced cognitive capacity to manage multiple layers of information simultaneously. Proficiency with complex grammar and varied sentence structures is also evident in written language, supporting the transition from narrative writing to demanding forms of expository and persuasive prose.

ii. Semantic Development

Semantic development, or the understanding and use of word meanings, continues throughout adolescence, driven by academic exposure and abstract thought. Vocabulary growth remains steady, primarily through exposure to complex academic texts and technical jargon in specialised subjects such as science and mathematics. Adolescents also gain proficiency in using and understanding abstract nouns (e.g., justice, integrity, hypothesis) and in metacognitive verbs (e.g., to believe, to hypothesise, to realise). The ability to understand figurative language, including metaphors, proverbs, satire, and sarcasm, expands significantly as a direct consequence of their capacity for higher-order abstract logic and propositional thinking, allowing them to appreciate that words convey meanings beyond their literal interpretation.

iii. Pragmatic Development

Pragmatics, defined as the set of rules governing the appropriate use of language in social contexts, undergoes its most pronounced development during adolescence, driven by the significant focus on peer relationships and social performance. Adolescents develop high proficiency in code-switching, the strategic adjustment of language, vocabulary, and register in response to social contexts and audience. For example, they learn to easily transition between the formal language used with educators and the informal language used with friends. Furthermore, they acquire sophisticated discourse skills, including the capacity to participate effectively in structured debates, sustain complex conversations on abstract topics, construct robust persuasive arguments, and utilise strategic conversational cues to manage social interactions.

4.2.4. Social Development in Adolescence

Social development during adolescence involves significant changes in interpersonal relationships, social roles, and social understanding. Building on cognitive identity exploration, adolescents increasingly define themselves through social roles and group memberships. As adolescents seek autonomy, they gradually move beyond family-centred interactions and place increased importance on peer relationships and broader social networks. Thus, social development in adolescence reflects a growing ability to form mature relationships while negotiating autonomy and connectedness.

The key features of social development during adolescence are discussed below.



i. Centrality of Peer Relationships

During adolescence, peer relationships become an important context for social interaction, learning, and emotional support. Peer groups provide validation, emotional sustenance, and a crucial context for learning adult social roles and intimacy.

ii. Development of Social Identity

Adolescents begin the process of individualisation, seeking to establish a distinct personal identity separate from their parents, and begin to define themselves in relation to social groups, roles, and shared interests, while maintaining meaningful family relationships. For example, an adolescent may identify themselves as a member of a sports team, cultural group, or academic club, shaping a sense of belonging and social identity.

iii. Development of Social Competence

Adolescents typically demonstrate improvement in social skills, including communication, cooperation, empathy, and conflict resolution. There is greater awareness of social expectations, responsibilities, and appropriate behaviour across different contexts. For example, an adolescent may listen to diverse perspectives during group work, negotiate solutions acceptable to all members, and adapt their behaviour and language suited to the context.

iv. Emergence of Intimate and Cooperative Relationships

Friendships transition from being centered on shared activities, common in childhood, to being centered on shared internal states, values, and emotional support. Friends become essential sources for validating the emerging sense of self and navigating emotional challenges. The emergence of romantic relationships is a key feature of social development in adolescence, providing a context for exploring intimacy and sexual identity while further differentiating themselves from their family of origin.

4.2.5. Moral Development in Adolescence

Moral development in adolescence is marked by a qualitative shift in moral reasoning, driven by advances in cognitive abilities, perspective-taking, and social awareness. Having moved beyond a purely consequence-based understanding of right and wrong, adolescents increasingly evaluate moral issues in relation to social expectations, shared values, and responsibilities. Moral judgment during this stage reflects a growing concern for maintaining relationships, fulfilling social roles, and upholding social order, while gradually moving towards independent ethical reflection.

Moral reasoning during adolescence typically corresponds to Kohlberg's conventional level, in which moral judgments are guided by social norms, expectations, and laws rather than by immediate personal consequences. Morality is understood as maintaining social harmony and fulfilling one's duties as a member of society. Kohlberg describes two stages characterising the conventional level.

Stage 3: Good Boy/Good Girl Orientation

At this stage, moral behaviour is guided by the desire to gain approval and maintain positive relationships with others. Right action is focused on seeking approval, maintaining

trust, and demonstrating loyalty. For example, an adolescent may follow rules at school not merely to avoid punishment, but because they want to be seen as responsible by teachers and peers.

Stage 4: Law and Order Orientation

As moral reasoning further develops, adolescents begin to understand that moral behaviour involves upholding the established laws and rules of society so as to ensure the functioning of the social system. Moral decisions are evaluated in terms of duty, authority, and respect for societal rules. Obeying laws is considered important not just for personal approval but for the functioning of society as a whole. For example, an adolescent believes that rules should be followed even when inconvenient, because breaking them could disrupt order or harm others.

Thus, moral development in adolescence includes,

i. Shift Towards Socially Oriented Moral Reasoning

Moral judgments in adolescence increasingly reflect a concern for social expectations, relationships, and shared values rather than personal consequences alone. For example, an adolescent may choose not to exclude a peer from a group activity because doing so would be unfair and detrimental to group harmony.

ii. Intentions Over Consequences

Adolescents place increased importance on intentions when evaluating moral actions, rather than judging behaviour solely by its outcomes. For example, an adolescent may regard an accidental mistake as less morally wrong than a deliberate act, even when the consequences are similar.

iii. Internalisation of Moral Standards

Moral values become more internalised, guiding behaviour even in the absence of external authority or supervision. For example, an adolescent may choose not to cheat on an assignment because it conflicts with their personal values of honesty.

iv. Growing Sense of Social Responsibility

Adolescents show increased awareness of their roles and responsibilities within social groups and institutions. For example, an adolescent may follow school rules not merely for approval, but because they believe rules are necessary for collective order.

v. Emerging Capacity for Reflective Moral Evaluation

Adolescents begin to reflect on moral rules and values, considering their purpose and fairness, even while primarily operating within conventional norms. For example, an adolescent may question whether a particular rule is fair while still recognising the importance of following agreed-upon rules.

4.2.6. Major Concerns of the Period

Adolescence is a period marked not only by developmental growth but also by specific concerns that arise as individuals adjust to the changing cognitive, emotional, social, and moral capabilities. These concerns reflect the demands of forming meaningful relationships,



negotiating independence within family contexts, and managing the increasing autonomy and the responsibilities that accompany it. Understanding these concerns helps to view adolescence as a stage of adjustment and adaptation rather than as a period of difficulty.

4.2.6.1. Peer Relationships in Adolescence

Peer relationships assume greater importance during adolescence as individuals spend more time interacting with their peers and sharing experiences outside the family. During adolescence, peer relationships transition from being a matter of shared activities to becoming the primary arena for emotional support, self-validation, and identity negotiation. These relationships provide opportunities for emotional support, social learning, and the development of communication and cooperation skills. Through interactions with peers, adolescents learn to negotiate roles, manage disagreements, and understand social expectations. Peer groups also contribute to identity formation by offering a sense of belonging and shared values.

However, the need for social acceptance, which often peaks during mid-adolescence, renders adolescents highly sensitive to peer approval and rejection. While positive peer interactions foster crucial developmental skills like intimacy and empathy, negative experiences, such as peer exclusion or bullying, can significantly elevate the risks of emotional and behavioural difficulties that are directed inward, such as anxiety, depression, and poor self-esteem. This need for acceptance may translate into a strong tendency to conform to group norms, which, in turn, can serve as a powerful catalyst for both beneficial and detrimental behaviours. For instance, this can result in either the adoption of prosocial behaviour, such as participating in voluntary community service, or, conversely, in engagement in high-risk behaviours, such as underage smoking or academic dishonesty, to secure or maintain peer-group inclusion.

4.2.6.2. Parent-Adolescent Relationship (Autonomy versus Connectedness)

Another central concern of adolescence involves the restructuring of parent-adolescent relationships to accommodate increasing autonomy while maintaining connectedness. Autonomy refers to the adolescent's drive for self-governance and independent decision-making, which is crucial for adulthood. This must be balanced with connectedness, which entails the maintenance of a secure, warm, and supportive bond with the family.

Developmental research suggests that adolescence is characterised not by detachment from parents, but by a gradual shift in the nature of dependence. Adolescents seek greater decision-making power and personal agency, particularly in matters related to social life, academics, and future planning. At the same time, parental support, guidance, and emotional availability continue to play a crucial role in psychological adjustment. Healthy development is associated with relationships that balance autonomy with warmth and open communication. Conflict, when present, often reflects negotiation of boundaries rather than breakdown of relationships.

4.2.6.3. Risk-Taking Behaviour and Psychological Well-Being

Risk-taking behaviour during adolescence can be best understood within a developmental framework that recognises the interaction between cognitive growth, emotional sensitivity, and social context. Increased risk-taking is partly related to adolescents' expanding capacity for exploration, novelty seeking, and goal-directed behaviour. Importantly, not all risk-taking is maladaptive; many forms are developmentally appropriate and contribute to skill acquisition and self-efficacy.

Psychological well-being during adolescence depends on the ability to regulate emotions, evaluate consequences, and access supportive relationships. Protective factors such as positive family relationships, peer support, and structured environments can guide adolescents toward constructive risk-taking while minimising harmful outcomes. For example, engaging in competitive sports, leadership roles, or creative performance involves managing risk, effort, and emotional regulation in adaptive ways.

Recap

- ◆ Adolescence marks a qualitative shift in cognition from concrete to formal operational thought.
- ◆ Reasoning becomes abstract and no longer relies on immediate tangible experiences.
- ◆ Hypothetico-deductive reasoning allows for systematic and scientific problem-solving.
- ◆ Propositional thinking enables the evaluation of logic independent of real-world facts.
- ◆ Perspective-taking abilities expand to include diverse social and cultural contexts.
- ◆ Metacognition involves the ability to monitor and regulate one's own thinking.
- ◆ Identity formation is the central psychosocial task involving the exploration of 'possible selves.'
- ◆ A psychosocial moratorium provides a period of experimentation with various ideologies.
- ◆ Brain development is uneven, with the limbic system maturing before the prefrontal cortex.
- ◆ Hormonal shifts and limbic system activity drive heightened emotional intensity.



- ◆ Adolescents develop the capacity to experience complex and mixed emotional states.
- ◆ Cognitive reappraisal emerges as a sophisticated strategy for emotional regulation.
- ◆ Emotional autonomy involves de-idealising parents and establishing personal boundaries.
- ◆ Language development shifts toward complex syntax and embedded grammatical structures.
- ◆ Semantic growth includes a deeper understanding of abstract nouns and figurative language.
- ◆ Pragmatic development is highlighted by the strategic use of code-switching in social contexts.
- ◆ Peer relationships transition from shared activities to emotional intimacy and support.
- ◆ Social identity is formed by defining oneself through group roles and shared interests.
- ◆ Moral reasoning shifts from consequence-based to socially-oriented logic.
- ◆ Kohlberg's Stage 3 focuses on gaining approval and maintaining positive relationships.
- ◆ Kohlberg's Stage 4 emphasises upholding laws to ensure social order and system function.
- ◆ The need for peer acceptance makes adolescents sensitive to social approval and rejection.
- ◆ Healthy development requires a balance between autonomy and family connectedness.
- ◆ Risk-taking is linked to novelty-seeking but can be channelled into adaptive, constructive growth.

Objective Questions

1. Which cognitive stage characterises adolescent thinking?
2. Which reasoning type involves testing specific predictions from general hypotheses?
3. Which cognitive ability evaluates logical form over content?

4. Which psychosocial task dominates adolescence?
5. Which Eriksonian crisis characterises adolescence?
6. Which social group becomes emotionally central?
7. Which level of Kohlberg's theory fits adolescents?
8. Which moral orientation focuses on social approval?
9. Which moral stage emphasises law and duty?
10. Which concern reflects exploration and novelty seeking?
11. What is the term for judging an argument's logic regardless of its factual truth?
12. Which term refers to 'thinking about one's own thinking'?
13. Which researcher defined the crisis of "Identity versus Role Confusion"?
14. What is the term for a period of identity experimentation before making commitments?
15. Which brain region associated with rewards matures faster in adolescents?
16. Which brain region governing executive function matures later in development?
17. What is the adaptive emotional strategy of reinterpreting a situation to reduce stress?
18. What term describes seeing parents as complex individuals rather than perfect figures?
19. Establishing personal emotional boundaries is a part of which process?
20. What is the study of word meanings and their development called?
21. Metaphors and satire are examples of what kind of language?
22. What term describes adjusting language use based on the social audience?
23. What are the rules governing the social use of language called?
24. According to Kohlberg, which level of morality do most adolescents occupy?



Answers

1. Formal operationsal
2. Hypothetico-deductive
3. Propositional thinking
4. Identity formation
5. Identity vs role confusion
6. Peer group
7. Conventional level
8. Good boy/girl
9. Law and order
10. Risk-taking
11. Propositional thinking
12. Metacognition
13. Erik Erikson
14. Psychosocial moratorium
15. Limbic system
16. Prefrontal cortex
17. Cognitive reappraisal
18. De-idealisation
19. Individualisation
20. Semantics
21. Figurative language
22. Code-switching

23. Pragmatics

24. Conventional level

Assignments

1. Compare hypothetico-deductive reasoning with the trial-and-error approach engaged in childhood.
2. Discuss how the cognitive ability for propositional thinking aids in the study of subjects like philosophy and mathematics.
3. Explain the biological reason for heightened emotionality in teenagers, focusing on brain structure maturation.
4. Describe the transition from emotional dependence to emotional autonomy, highlighting the role of de-idealisation.
5. How does pragmatic language development allow an adolescent to navigate different social spheres effectively?
6. Analyse the shift in the nature of friendships from late childhood into middle adolescence.

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**BLOCK
5**

Adulthood

Unit 1

Physical and Motor Development in Adulthood

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ describe the characteristic patterns of physical and motor development across adulthood
- ◆ examine the biological, psychological, and socio-environmental factors influencing physical health and motor functioning in adulthood
- ◆ analyse key transitional issues in adulthood, including role transitions, identity consolidation, and the development of intimacy

Prerequisite

By the end of adolescence, the rapid and visible physical changes associated with growth and puberty gradually stabilise. Height reaches its maximum, sexual maturation is largely complete, and motor skills become more refined rather than newly acquired. Entering adulthood, individuals often experience a sense of physical steadiness, marked by optimal strength, coordination, endurance, and functional efficiency. Tasks that once required conscious effort, such as maintaining posture, performing skilled movements, or sustaining physical activity, are now carried out with greater ease and control. This phase represents the consolidation of physical and motor capacities developed earlier, rather than a drastic biological transformation.

Yet adulthood is not a static period of physical functioning. The body continues to change, though more subtly and unevenly, influenced by lifestyle, work demands, health behaviours, social roles, and environmental conditions. Questions now shift from “*How is my body changing?*” to “*How do I maintain, use, and adapt my physical capacities across changing responsibilities?*” Role transitions related to work, relationships, and family life place new demands on physical energy and health, while identity consolidation and intimacy are closely tied to body image, vitality, and well-being. As you begin this unit, consider how physical and motor

development in adulthood is shaped not only by biological maturity but also by choices, contexts, and challenges that influence long-term health and functional independence. This perspective helps frame adulthood as a period of both stability and gradual adaptation, laying the groundwork for understanding subsequent developmental changes.

Keywords

Senescence, Sarcopenia, Osteoporosis, Hayflick Limit, Telomeres, Role Assumption, Identity Consolidation, Functional Capacity, Metabolic Syndrome, Self-Determination Theory

Discussion

Adulthood represents the developmental period following adolescence and extending through early, middle, and later years of life. Unlike adolescence, adulthood is not defined by a single biological event or drastic transition. Instead, it is characterised by relative physical maturity, role assumption, and gradual adaptation to changing personal and social demands. Although chronological age is often used for classification, adulthood is more meaningfully understood in terms of social roles, responsibilities, and psychological consolidation. For descriptive purposes, adulthood is commonly divided into three phases:

- *Early Adulthood* (approximately 20-40 years), characterised by peak physical functioning, entry into occupational roles, establishment of intimate relationships, and increasing independence,
- *Middle Adulthood* (approximately 40-60 years), marked by role stability and expansion, increased responsibility toward family and society, and the beginning of subtle physical and motor changes,
- *Late Adulthood* (60 years and above), characterised by gradual physical decline, role reorganisation, retirement, and adaptation to ageing-related changes.

Although adulthood is regarded as a period when development is complete, everyday experience suggests otherwise. Individuals continue to adjust their bodies, roles, and expectations as they navigate work, relationships, and evolving life demands. Physical growth may have stabilised, but the body is actively used, maintained, and adapted to meet occupational, social, and personal responsibilities. How adults manage energy, strength, coordination, and health becomes closely linked with how they organise their lives. Understanding adulthood as a developmental stage helps explain why physical and motor functioning remain important, even when change is gradual and less visible than in earlier stages.



5.1.1. Characteristics of Adulthood

i. Physical Maturity

Adulthood is marked by the complete attainment of physical growth and the stabilisation of bodily structures. Motor abilities, including coordination, reaction time, and balance, peak in early adulthood, enabling individuals to perform complex physical and cognitive tasks required for independent living, meeting occupational demands, and social participation. Motor development during adulthood is thus characterised less by the acquisition of new skills and more by the maintenance, refinement, and adaptation of existing motor abilities.

ii. Role Assumption

A central feature of adulthood is the assumption of multiple social roles, such as partner, parent, employee, and community member. These roles require sustained effort, consistent organisation, and effective management of energy and health. For example, an adult may manage a full-time job while caring for young children and maintaining household responsibilities.

iii. Gradual and Subtle Change

Physical and motor functioning in adulthood remains relatively stable for long periods. However, subtle changes, such as decreased flexibility, slower reaction time, or reduced endurance, gradually appear, particularly in middle adulthood, influenced by lifestyle, health behaviours, and environmental conditions, and occur at different rates across individuals.

iv. Continuity and Adaptability

Development in adulthood is characterised by both continuity and adaptability. Earlier developmental patterns influence physical and motor functioning during this stage, yet adults exercise greater control over their developmental outcomes through lifestyle choices, health practices, work routines, and self-care patterns. This increased role of personal regulation distinguishes adulthood from earlier developmental stages.

v. Integration of Personal and Social Identity

Adulthood involves the consolidation of identity and the integration of personal values with social expectations. Individuals typically balance autonomy with social responsibility, negotiating multiple roles and adapting their behaviours in response to evolving personal and societal demands.

While the general features of adulthood provide a foundation, the expression of these characteristics varies across early, middle, and late adulthood, reflecting the distinct developmental tasks and challenges of each phase. Therefore, to understand adulthood more fully, it is essential to consider how physical, social, and psychological characteristics evolve across its different stages, from early to late adulthood.

5.1.1.1. Characteristics of Early Adulthood

During early adulthood, individuals typically achieve optimal physical and motor capacities, including strength, endurance, flexibility, and coordination. Fine and gross motor skills are highly efficient, allowing adults to perform complex tasks in occupational, domestic, and social contexts. This phase is also characterised by the consolidation of social and personal roles as individuals establish careers, intimate partnerships, and families. Health is generally robust, although lifestyle choices related to exercise, nutrition, sleep, and stress management begin to have lasting effects on physical functioning. Adults in this stage actively regulate their behaviours and routines, developing habits that support long-term well-being and the maintenance of functional capacities.

5.1.1.2. Characteristics of Middle Adulthood

Gradual, subtle changes in physical and motor functioning characterise middle adulthood. While muscular strength, joint flexibility, cardiorespiratory endurance, and simple reaction time exhibit a slight but progressive decline, the proficiency of both fine and gross motor skills remains largely sufficient for activities of daily living. This stage often involves balancing peak occupational responsibilities with parenting and caregiving for ageing relatives, placing sustained demands on physical stamina and coordination. Consequently, adults in this phase may increasingly adopt conscious compensatory and adaptive strategies, including modifying habitual exercise routines, prioritising rest and recovery, and employing stress-management techniques, to maintain functional efficiency and autonomy. The adaptive experiences and adjustments cultivated during middle adulthood are critical for establishing the functional reserve and coping mechanisms required to navigate the more pronounced physiological changes of late adulthood.

5.1.1.3. Characteristics of Late Adulthood

Late adulthood is characterised by a more pronounced decline in key physical and motor abilities, including muscle strength, joint flexibility, and coordination. Physiological recovery following physical exertion is often prolonged, necessitating either adapting motor tasks or using assistive aids. Social and occupational roles often change with retirement or reduced responsibilities, requiring adults to reorganise their daily routines to accommodate changes in physical capacity. These adaptations often involve modifying motor activities to maintain safety and independence. Active engagement in health-promoting behaviours, utilisation of preventive healthcare services, and implementation of environmental modifications become crucial for preserving mobility, maintaining personal independence, and ensuring quality of life.

Havighurst's Developmental Tasks	
Early Adulthood	Middle Adulthood
♦ Getting started in an occupation	♦ Achieving adult civic and social responsibility



♦ Selecting a mate	♦ Assisting teenage children to become responsible and happy adults
♦ Learning to live with a marriage partner	♦ Developing adult leisure-time activities
♦ Starting a family	♦ Relating oneself to one's spouse as a person
♦ Rearing children	♦ Accepting and adjusting to the physiological changes of middle age
♦ Managing a home	♦ Reaching and maintaining satisfactory
♦ Taking on civic responsibility	♦ performance in one's occupational career
♦ Finding a congenial social group	♦ Adjusting to ageing parents

5.1.2. Factors Affecting Physical and Motor Development in Adulthood

Have you noticed how adults of the same age often differ markedly in their physical stamina, flexibility, or ease of movement? While some appear energetic and physically active, others may experience early fatigue, reduced coordination, or mobility. Physical and motor development in adulthood is not uniform or determined by chronological age alone. It reflects the interaction of biological endowment, health status, lifestyle behaviours, occupational demands, psychological resources, and social environments. Understanding these influences helps explain why adulthood is marked by both stability and variation in physical functioning. The following discussion examines the major factors that shape physical and motor development during adulthood, highlighting how these factors interact to support or constrain functional capacity.

5.1.2.1. Biological Factors

Biological factors are the inherent, largely non-modifiable characteristics that shape development. These factors set the fundamental limits within which development occurs and influence how the body changes with age.

- **Genetics and Heredity:** An individual's genetic endowment establishes the potential limit for physical strength, endurance, body composition, and motor efficiency. Genetic variations affect susceptibility to age-related pathologies and predisposition to conditions such as sarcopenia (muscle loss) and osteoporosis (bone loss). However, genetic predispositions interact with lifestyle and environmental factors rather than

rigidly determining outcomes.

- **Age and Gender:** While age serves as the primary intrinsic determinant of systemic decline, gender plays a critical mediating role. Hormonal differences, such as oestrogen levels in females, significantly influence metabolic rate, fat distribution, cardiovascular risk, and the rate of bone mineral density loss, particularly in middle and late adulthood.
- **Chronic Health Status:** Chronic health conditions such as diabetes, hypertension, arthritis, and cardiovascular disorders can restrict movement, reduce stamina, and impair coordination. Poorly managed chronic conditions may accelerate physical decline, limit daily activities, and increase dependency. In contrast, effective management through medical care, physical activity, and self-regulation can help adults maintain functional independence for extended periods.

5.1.2.2. Lifestyle and Behavioural Factors

These refer to the everyday habits and behavioural choices that significantly influence physical and motor functioning across adulthood. These factors are largely modifiable and can therefore mitigate age-related functional decline, thus influencing the course of successful ageing.

- **Physical Activity and Exercise:** This is considered the single most potent factor in preserving motor and physical capacities during adulthood. Adults who engage in regular physical activity are more likely to maintain balance and mobility, whereas sedentary lifestyles contribute to muscle weakness, reduced stamina, and impaired motor efficiency. Physical inactivity accelerates age-related decline, whereas active lifestyles can delay functional limitations well into later adulthood.
- **Nutrition and Dietary Patterns:** Adequate nutritional intake is essential for tissue maintenance, repair, and energy balance. Sufficient protein intake is required to mitigate sarcopenia, while key micronutrients, such as calcium and vitamin D, are fundamental for maintaining bone health. Poor dietary habits contribute to chronic inflammation and metabolic syndrome, accelerating systemic deterioration.
- **Patterns of Sleep and Rest:** Sleep is essential for physical restoration, motor coordination, and overall bodily regulation. Chronic sleep deprivation or irregular sleep patterns can impair reaction time, reduce endurance, and increase vulnerability to injury. In adulthood, competing work and family demands often disrupt rest, making sleep quality a crucial factor in maintaining physical and motor efficiency.
- **Substance Use:** Chronic substance use, particularly excessive alcohol consumption and nicotine use, impairs cardiovascular integrity, neurological function, and tissue repair processes.

5.1.2.3. Environmental and Contextual Factors

These factors relate to the nature of work, living conditions, and physical environments that shape physical and motor functioning during adulthood.



- ***Socioeconomic Status:*** Socioeconomic status, encompassing income and education, is a strong determinant of physical and motor conditions in adulthood. Higher status generally facilitates access to high-quality healthcare, nutritious foods, and safe environments conducive to physical activity, thereby slowing the rate of physical decline.
- ***Occupational and Social Demands:*** The physical nature of one's employment, whether highly demanding or excessively sedentary, impacts long-term physical health. For example, individuals engaged in physically demanding occupations may experience long-term joint strain due to repetitive movements. In contrast, those in sedentary desk jobs may experience reduced muscle strength and flexibility due to prolonged inactivity. Similarly, social roles influence daily energy expenditure and the types of motor skills that are prioritised and maintained.
- ***Physical and Social Environment:*** The broader environment in which adults live also affects physical and motor development. Access to safe spaces for physical activity, walkable neighbourhoods, and supportive social environments encourages movement and active living. In contrast, unsafe or restrictive environments may limit physical activity, contributing to sedentary behaviour and functional decline.

5.1.2.4. Psychosocial Factors

These factors refer to the influence of mental states, interpersonal relationships, and psychosocial contexts on physical and motor development during adulthood.

- ***Motivation and Perceived Competence:*** Motivation, particularly intrinsic motivation, driven by enjoyment and personal interest, is considered crucial for sustained engagement in physical activity. According to Self-Determination Theory (SDT), the satisfaction of the psychological needs for autonomy (control over one's actions) and competence (feeling capable) enhances intrinsic motivation. Perceived physical limitations and ageist stereotypes can act as significant barriers, reducing an individual's sense of competence and thus their motivation to maintain motor skills.
- ***Mental Health Status:*** Psychological disorders are frequently associated with accelerated physical decline. For instance, depressive symptoms often manifest as psychomotor slowing, decreased energy levels, and a lack of motivation, which leads to reduced physical activity and, consequently, loss of muscle mass and functional capacity. Chronic anxiety can also reduce engagement in activities perceived as risky, potentially impacting balance and coordination maintenance.
- ***Social Support and Relationships:*** Social relationships provide emotional encouragement, practical assistance, and opportunities for active engagement. Supportive family, peer, and community networks can motivate adults to remain physically active and manage health challenges effectively. Social isolation, on the other hand, may limit movement, reduce participation in physical activities, and negatively affect overall physical and motor development.

5.1.3. Issues of Transition

Changes in physical functioning during adulthood are intertwined with psychosocial transitions that shape how individuals use, maintain, and adapt their capacities. Imagine starting a new job without clear expectations, moving into an independent living arrangement, or deciding whether to commit to a long-term relationship. How might these shifts influence you and your understanding of yourself? How do small daily choices accumulate to create significant changes over time? Even minor adjustments, such as learning to manage responsibilities and balancing personal goals with relationships, invite reflection and adaptation. Reflecting on these transitions can help us view adulthood as a continuous process of development, in which individuals gradually adapt to new roles and integrate their experiences into a coherent sense of self.

5.1.3.1. Role Transition

Role transitions in adulthood refer to the shifts in responsibilities and social expectations that occur as individuals move from adolescence into adulthood. This includes the transition from dependent, often student-based roles, to independent, self-sufficient adult roles. It involves establishing new relationships with social institutions and family. Common examples include entering the workforce, achieving financial independence, or assuming caregiver roles. These transitions require individuals to negotiate new expectations while integrating them with existing values and competencies. The success of role transitions often depends on preparedness, prior experiences, and the availability of social support. For instance, a young adult starting a professional career may need to adjust daily routines, develop time management strategies, and navigate workplace relationships simultaneously.

5.1.3.2. Identity Consolidation

Identity consolidation is the process of integrating past experiences, personal values, social roles, and future goals into a coherent and stable sense of self. This process builds on the exploration that typically occurs during adolescence but continues into adulthood, as individuals encounter new responsibilities, cultural contexts, and personal challenges. For example, a young adult may reflect on their past educational and work experiences to decide whether to pursue further studies or a particular career path. Similarly, someone forming a long-term romantic relationship may consider their values, family expectations, and personal goals to determine how to balance commitment with personal growth. Successful identity consolidation enables adults to make informed choices about careers, relationships, and personal goals. In contrast, unresolved conflicts or delays in this process, such as uncertainty about career direction or difficulty committing to meaningful relationships, can lead to indecision or a fragmented sense of self. However, self-reflection and engagement in meaningful experiences facilitate identity consolidation, helping adults align their behaviours and commitments with their sense of self.

5.1.3.3. Intimacy

Intimacy refers to the ability to form close, trusting, and supportive relationships with others. Developing intimacy involves self-disclosure, empathy, and mutual understanding, and is influenced by one's prior experiences and social skills. For example, an adult



entering a new romantic relationship may need to communicate openly about personal values and expectations, negotiate differences, and build trust over time. Similarly, forming close friendships or collaborating effectively with colleagues requires understanding others' perspectives while maintaining one's own boundaries. Challenges in developing intimacy, such as fear of vulnerability, unresolved identity conflicts, or difficulty managing emotions, can affect relationship quality and overall well-being. The long-term interaction of these factors and transitions becomes most evident in the domain of physical health, which is discussed in the following section.

5.1.4. Physical Health

Physical health in adulthood is not just the absence of disease; it reflects the body's continuous adaptation to changing demands and environments. Adults experience gradual changes in strength, endurance, coordination, and metabolism, affecting how they perform everyday tasks, manage occupational responsibilities, and maintain independence in daily functioning. Thus, physical health in adulthood reflects the body's ongoing adaptation to internal biological changes and external role demands. Unlike childhood or adolescence, when development is primarily growth-oriented, adulthood involves maintenance, optimisation, and gradual adjustment of physiological and motor capacities. Functional capacities, including strength, endurance, coordination, and energy regulation, are critical for managing occupational, familial, and social responsibilities. Changes in these capacities occur gradually, are shaped by prior development, and interact with psychosocial, environmental, and cognitive factors. Understanding physical health from a developmental perspective highlights the continuity, variability, and adaptive nature of adult functioning.

5.1.4.1. Health Issues Typical of Adulthood

The health issues typical of adulthood are best understood as arising from the interaction of biological changes, lifestyle patterns, psychosocial stressors, and cumulative exposure to environmental risks. They differ across early, middle, and late adulthood, reflecting both gradual physiological changes and behavioural and environmental influences.

i. Early Adulthood

Although adults in this phase are generally healthy, certain health issues may arise. These include obesity and weight management concerns linked to sedentary work or irregular dietary patterns, mental health challenges such as stress, anxiety, or depression, reproductive and sexual health issues, and musculoskeletal strain resulting from occupational posture, repetitive movements, or high-intensity recreational activities.

ii. Middle Adulthood

This phase is characterised by a gradual physiological decline and an increasing prevalence of chronic conditions. Cardiovascular disorders, including hypertension and atherosclerosis (a condition in which plaque builds up inside the arteries), often emerge due to lifestyle, stress, and genetic predispositions. Metabolic conditions such as type 2 diabetes may become more pronounced. Musculoskeletal problems, including osteoarthritis and back pain, develop from cumulative physical strain. Sensory declines,

particularly in vision and hearing, may affect daily functioning. Mental health issues, including stress, burnout, or depression, frequently arise from balancing occupational and family responsibilities.

iii. Late Adulthood

Late adulthood is characterised by more pronounced age-related changes and increased vulnerability to both acute and chronic health problems. Cardiovascular and cerebrovascular diseases, such as heart disease and stroke, are common. Musculoskeletal degeneration, including osteoporosis and sarcopenia, reduces mobility and functional independence. Sensory impairments in vision, hearing, taste, and smell affect daily life. Cognitive and neurological conditions, such as mild cognitive impairment and dementia, may emerge. The immune system declines, increasing susceptibility to infections and prolonging recovery from illness. Mental health challenges, including loneliness, depression, and anxiety, often accompany role changes, bereavement, and retirement.

Table. 5.1.1. Health Concerns during Adulthood

System	Early Adulthood	Middle Adulthood	Late Adulthood
Sensory	Peak function. Minor decrease in the ability to hear high-frequency sounds.	Presbyopia or difficulty focusing on near objects necessitates reading glasses. Minor hearing loss accelerates.	Significant decline in vision and hearing. Reduced sensitivity of taste and smell.
Cardiovascular	The system is at peak efficiency.	Arterial walls begin to stiffen, increasing the risk of hypertension (high blood pressure).	Increased prevalence of cardiovascular disease. Reduced cardiac output under stress.
Musculoskeletal	Peak strength and endurance.	Onset of <i>sarcopenia</i> (age-related loss of muscle mass) Bone density begins to decrease (accelerated in post-menopausal women).	Accelerated muscle loss. Increased risk of <i>osteoporosis</i> and debilitating falls due to balance issues and frailty.
Reproductive	Peak fertility.	Menopause (cessation of menstruation and fertility) in women, with associated hormonal changes. Gradual decline in testosterone and sperm quality in men (andropause).	Reproductive function generally ceased, and hormonal levels stabilise at lower levels.



5.1.4.2. Characteristics of Physical Health in Adulthood

i. Functional Capacity and Adaptation

One key consideration during adulthood is the ability to perform daily activities and fulfil role requirements. Adults must integrate their physiological resources with the demands of work, family, and social participation. For example, a middle-aged adult may experience slower reaction times or reduced flexibility but can maintain productivity and independence through compensatory adjustments, such as pacing tasks or structuring activities. Functional capacity, thus, reflects both biological potential and adaptive behavioural strategies.

ii. Gradual and Cumulative Changes

Adults experience subtle and cumulative physiological changes that vary from individual to individual. Muscle mass, bone density, cardiovascular efficiency, and sensory abilities may decline slowly, often imperceptibly, over decades. These changes interact with prior developmental experiences, lifestyle patterns, and psychosocial resources. For instance, adults with a history of regular physical activity may experience slower declines in endurance and strength, whereas sedentary lifestyles can accelerate functional limitations.

iii. Interactions with Psychological and Social Factors

Physical health in adulthood is influenced by motivation, perceived competence, mental health, and social context. Psychological well-being affects energy levels, engagement in activity, and the capacity to respond to physical challenges. Social networks, occupational roles, and caregiving responsibilities shape daily energy expenditure and the types of motor skills prioritised. For example, adults who manage multiple social roles may experience fatigue or cumulative physical strain, illustrating the interaction of physical and psychosocial factors.

iv. Variability and Individual Differences

A central consideration in adult physical health is the variability among individuals of the same age. Genetic predispositions, early developmental trajectories, chronic health conditions, lifestyle patterns, and environmental exposures produce diverse outcomes in strength, endurance, and motor coordination. Recognising this variability is essential for understanding adult development, as chronological age alone does not reliably indicate functional health status.

5.1.4.3. Physical Ageing

The physical transformation across adulthood is a dual process involving two distinct forms of ageing: *primary* and *secondary*. Understanding this distinction is foundational to the study of adult health.

i. Primary Ageing (Senescence)

Primary ageing refers to the universal, genetically determined, and irreversible biological changes that occur as individuals age. These changes are inevitable and affect all

members of the species, regardless of health status or environment. The *Hayflick Limit* concept posits that human cells can only divide a finite number of times. Ageing is linked to the shortening of telomeres, the protective caps on chromosomes. Once telomeres are critically short, cells stop replicating, resulting in senescence.

ii. Secondary Ageing

Secondary ageing refers to the physical declines and pathological changes caused by environmental factors, behavioural choices, and disease. Unlike primary ageing, secondary ageing is preventable or manageable through lifestyle changes. Factors contributing to secondary ageing include poor diet, lack of physical exercise, chronic stress, substance abuse, and exposure to environmental toxins. Secondary ageing is considered the primary driver of the onset of most age-related chronic diseases, such as Type 2 diabetes, cardiovascular disease, and some cancers. It accounts for the vast individual variability in health observed in later life.

Recap

- ◆ Adulthood is defined more by social roles and psychological consolidation than biological events.
- ◆ Early adulthood (20–40) is the period of peak physical functioning and career entry.
- ◆ Middle adulthood (40–60) involves role stability, expansion, and subtle physical changes.
- ◆ Late adulthood (60 and beyond) is characterised by role reorganisation and adaptation to physical decline.
- ◆ Physical maturity in adulthood marks the stabilisation of bodily structures and peak strength.
- ◆ Adults manage multiple social roles simultaneously, requiring effective energy regulation.
- ◆ Development in this stage is unique because adults exercise greater personal control over health outcomes.
- ◆ Early adulthood features robust health but establishes habits that dictate long-term well-being.
- ◆ Middle adulthood necessitates compensatory strategies to manage declining flexibility and reaction time.
- ◆ Late adulthood often requires assistive aids and environmental modifications to maintain independence.



- ◆ Genetic factors set the ‘potential limits’ but interact with lifestyle choices.
- ◆ Sarcopenia and osteoporosis are key biological risks that increase with advancing age.
- ◆ Regular physical activity is the most potent factor for preserving motor capacity.
- ◆ Proper nutrition, specifically protein and vitamin D, is essential to mitigate tissue loss.
- ◆ Chronic sleep deprivation in adults impairs reaction time and increases injury vulnerability.
- ◆ High socioeconomic status typically correlates with slower rates of physical decline.
- ◆ Occupational demands, whether sedentary or strenuous, shape long-term joint and muscle health.
- ◆ Intrinsic motivation and perceived competence are crucial for maintaining physical activity.
- ◆ Role transitions involve moving from dependent student roles to self-sufficient adult roles.
- ◆ Identity consolidation integrates past experiences and values into a stable sense of self.
- ◆ Intimacy involves self-disclosure and building trust within supportive relationships.
- ◆ Primary ageing refers to universal, genetically determined, and irreversible biological changes.
- ◆ Secondary ageing results from preventable factors like poor diet, stress, and lack of exercise.
- ◆ The shortening of telomeres is a primary biological explanation for cellular senescence.

Objective Questions

1. What is the approximate age range for early adulthood?
2. Which phase of adulthood shows peak physical functioning?
3. What specific term describes the age-related loss of muscle mass?

4. Which term refers to the age-related loss of bone mineral density?
5. What is considered the most potent factor in preserving motor capacity in adults?
6. Which micronutrients are essential for maintaining bone health in adulthood?
7. Which theory links motivation to the needs for autonomy and competence?
8. What process integrates past experiences and personal values into a stable self?
9. What term describes the ability to form close, trusting, and supportive relationships?
10. Which health issue involves plaque buildup inside the arteries?
11. What is the term for the body's ability to perform daily tasks and fulfil roles?
12. What is the name for universal, irreversible biological ageing?
13. What type of ageing is caused by environmental factors and behavioural choices?
14. What is the finite number of times a human cell can divide called?
15. What are the protective caps on the ends of chromosomes called?
16. Which type of ageing is primarily responsible for Type 2 diabetes?
17. Which female hormone influences bone density loss in middle adulthood?
18. What is the term for seeing parents realistically as complex individuals?
19. Which type of ageing is genetically programmed?
20. Which type of ageing results from lifestyle and disease?



Answers

1. 20–40 years
2. Early adulthood
3. Sarcopenia
4. Osteoporosis
5. Physical exercise
6. Calcium and vitamin D
7. Self-Determination Theory
8. Identity consolidation
9. Intimacy
10. Atherosclerosis
11. Functional capacity
12. Primary ageing
13. Secondary ageing
14. Hayflick limit
15. Telomeres
16. Secondary ageing
17. Oestrogen
18. De-idealisation
19. Primary ageing
20. Secondary ageing

Assignments

1. Explain how adulthood is defined by social roles and psychological maturity rather than chronological age.
2. Compare the physical and motor challenges faced by individuals in middle adulthood versus late adulthood.
3. Discuss the importance of lifestyle and behavioural factors in mitigating age-related functional decline.
4. Analyse the interaction between occupational demands and long-term physical health in adults.
5. Differentiate between primary ageing and secondary ageing, providing examples of factors for each.

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SGOU

Unit 2

Cognitive Development in Adulthood

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ discuss cognitive and emotional development across adulthood
- ◆ examine social development in adulthood, with reference to marriage, family roles, and changing interpersonal responsibilities
- ◆ explain moral development in adulthood in relation to life experiences, social roles, and value systems
- ◆ evaluate the role of social support in promoting well-being and successful ageing

Prerequisite

Adulthood is often marked as a period of responsibility and decision-making, in which individuals are expected to regulate emotions, sustain relationships, and act in socially and morally appropriate ways. While cognitive abilities may appear stable, everyday life presents situations that require careful judgement, emotional balance, and consideration of others. How adults respond to stress, intimacy, family roles, and ethical dilemmas reveals how thinking continues to develop through experience rather than through formal instruction alone.

As you begin this unit, pause to reflect on how your own thoughts are shaped by emotions, relationships, and values. How do personal commitments influence the way decisions are made? In what ways do social roles such as partner, parent, or peer demand new forms of reasoning and emotional understanding? With increasing age, how do concerns about well-being, support, and purpose affect the way individuals interpret life events and evaluate their choices? This unit invites you to examine cognitive development in adulthood as a reflective and integrative process, one that connects emotional growth, social engagement, moral reasoning, and successful ageing.



Keywords

Relativism, Dialectical Thinking, Pragmatism, Successful Ageing, Post-Conventional Level, Life Review, Well-Being Paradox, Positivity Effect

Discussion

5.2.1. Cognitive Development in Adulthood

By the time individuals enter adulthood, they have acquired the fundamental cognitive abilities needed to reason, remember, and solve problems. However, does cognitive development stop once adulthood is reached? Or does it raise another question: how do thinking and reasoning change when learning is no longer confined to classrooms but is embedded in everyday life? Cognitive development in adulthood is expressed less through the emergence of new abilities and more through the refinement, reorganisation, and application of existing capacities to complex real-world situations. Adults are required to integrate biological predispositions with accumulated experience while responding to the cognitive demands of work, family life, and social responsibility. Understanding cognitive development in adulthood, therefore, involves examining how cognitive processes adapt to practical challenges, shifting roles, and long-term goals rather than simply increasing in capacity.

5.2.1.1. Key Features of Cognitive Development in Adulthood

i. Continuity and Reorganisation of Cognitive Abilities

Cognitive development in adulthood is marked not by the emergence of entirely new cognitive structures but by the continuity, reorganisation, and optimisation of existing abilities. While Jean Piaget's stages of cognitive development traditionally culminate in the formal operational stage, research in lifespan psychology shows that cognitive change continues throughout adulthood. Thus, cognitive development across adulthood cannot be understood as one of uniform decline; instead, it involves both gains and losses across cognitive domains. Many researchers propose a fifth stage of cognitive development, known as *post-formal thought*, which emerges in early adulthood. This type of thinking is characterised by a greater appreciation for complexity, context, and the integration of emotion and logic, involving:

- *Relativism*: The recognition that knowledge is not absolute but is contextual and subjective. Adults understand that truth can vary depending on the situation and perspective.
- *Dialectical Thinking*: The ability to integrate opposing or contradictory ideas (thesis and antithesis) into a new, more complex synthesis. This allows for the recognition

and acceptance of paradoxes and contradictions in life.

- **Pragmatism:** The application of abstract thought in a practical, real-world context. Adults are thus adept at finding realistic, workable solutions to complex problems, even when the ‘perfect’ solution does not exist.

ii. Role of Experience and Knowledge Accumulation

A defining feature of adult cognitive functioning is the increasing reliance on experience-based knowledge. Through education, work, and social participation, adults accumulate knowledge that enhances judgement and decision-making in familiar domains. This experiential knowledge allows adults to compensate for gradual changes in fundamental cognitive processes, supporting effective problem-solving and everyday functioning.

iii. Fluid and Crystallised Intelligence

A key theoretical distinction for understanding cognitive change in adulthood derives from the work of Raymond Cattell and John Horn, separating intelligence into two major components: *fluid intelligence* and *crystallised intelligence*. Fluid intelligence involves the ability to think logically, identify patterns, and solve new problems without relying on previous learning. It is used when individuals encounter unfamiliar situations that require rapid reasoning or cognitive flexibility. This form of intelligence typically peaks in early adulthood and may decline gradually with age. In contrast, crystallised intelligence refers to knowledge and skills acquired through education, experience, and repeated practice, including abilities such as vocabulary, general knowledge, and expertise gained through work or daily life. Because crystallised intelligence is based on accumulated learning, it often remains stable or continues to improve across much of adulthood. Together, these patterns suggest that cognitive ageing involves changes in the type of abilities used, rather than a uniform decline in overall intelligence.

iv. Individual Differences and Influencing Factors

Cognitive development during adulthood shows substantial individual variation, shaped by factors such as education, occupation, health, lifestyle, and sociocultural context. For example, adults engaged in cognitively demanding occupations, such as academics, often demonstrate sustained functioning in higher-order cognitive capabilities. Similarly, good physical health, regular mental stimulation, and active social engagement can support cognitive functioning, whereas chronic illness or prolonged stress may limit cognitive efficiency. Sociocultural environments also influence cognitive development by determining access to learning opportunities and the value placed on intellectual activity. These differences highlight that adulthood is not a uniform developmental stage but rather one characterised by diverse cognitive pathways and outcomes.

v. Adaptation and Compensatory Strategies

Another notable feature of adult cognition is the use of adaptive and compensatory strategies to manage cognitive change. Adults may rely more on accumulated knowledge, use external memory aids, or modify task demands to maintain adequate functioning. Such strategies reflect cognitive resilience and highlight development in late adulthood as an adaptive process rather than one of decline.



Age-Related Changes in Specific Cognitive Abilities During Adulthood

Processing Speed:

This is one of the most consistent changes, with a gradual slowing starting in early adulthood. This is often cited as a fundamental factor underlying declines in performance across many other cognitive tasks.

Memory:

Working Memory (short-term processing and manipulation of information) tends to decline with age.

Episodic Memory (memory for specific events and experiences) shows a more pronounced decline than semantic memory.

Semantic Memory (general world knowledge, facts, and vocabulary) often remains intact or even improves

5.2.2. Emotional Development in Adulthood

Adults are often expected to be emotionally stable and self-controlled. Why is such emotional stability considered important in adulthood, and how is it developed and sustained as individuals manage long-term responsibilities, relationships, and life changes? Emotional development in adulthood is characterised less by the acquisition of new emotions and more by the refinement, stability, and regulation of existing emotional responses. As individuals move through adulthood, they become more selective in their emotional investments, develop strategies to manage stress, and place greater value on emotionally meaningful relationships. Research indicates that although aspects of cognitive functioning decline, emotional well-being often remains stable or even improves across middle and late adulthood. Thus, understanding emotional development in adulthood involves examining how emotions are regulated, how emotional priorities shift over time, and how emotional well-being is maintained amid changing life circumstances.

The key aspects of emotional development in adulthood involve,

i. Emotional Regulation and Maturity

A key feature of emotional development in adulthood is improved emotional regulation, or the ability to manage and respond to emotions in adaptive ways. For example, a working adult may feel frustrated when a project faces repeated delays, but instead of reacting impulsively, they plan alternative strategies or communicate calmly with their team. Similarly, a parent may experience stress when managing the conflicting needs of children and work responsibilities, but uses reflection and problem-solving to respond constructively. Such emotional maturity supports stable relationships and effective functioning in personal and professional roles.

ii. Changes in Emotional Experience

Although adults continue to experience the full range of emotions, the focus and quality of emotional experiences often change during adulthood. Adults may prioritise emotionally meaningful relationships over casual social interactions and may become less reactive to minor stressors. For instance, a middle-aged adult may feel deep satisfaction from nurturing close friendships or seeing a child succeed, while remaining relatively unbothered by workplace inconveniences. Positive emotions such as contentment and gratitude often increase, and emotional responses become more context-sensitive.

iii. Coping with Stress and Life Transitions

Adulthood involves multiple life transitions that demand effective coping and place emotional demands on individuals. Adults often develop problem-focused and emotion-focused coping strategies. For example, someone facing a job loss might actively update their skills and search for new employment (problem-focused) while seeking familial support to manage anxiety about financial uncertainty (emotion-focused). Similarly, an adult caring for an older parent while also fulfilling work and household responsibilities may plan medical appointments and daily routines (problem-focused) and use mindfulness techniques or seek support from family members to manage the stress of balancing these responsibilities (emotion-focused). Over time, these strategies enhance resilience and flexibility in dealing with challenges.

iv. Emotional Well-Being and Mental Health

Emotional development is closely linked to overall well-being and mental health. Factors such as social support, self-esteem, and a sense of purpose contribute to emotional stability. For example, participation in community groups or pursuing hobbies can boost satisfaction and reduce stress. Conversely, chronic stress, unresolved conflicts, or isolation can contribute to anxiety or depression. Emotional development during adulthood thus involves both strengthening adaptive emotional capacities and managing vulnerabilities throughout the period.

5.2.3. Social Development in Adulthood

Adulthood is a stage in which social relationships are central to both personal growth and everyday functioning. Consider the variety of roles an adult may take: a partner in a marriage, a parent, a child to ageing parents, a friend, or a member of a wider community. How do adults establish and maintain meaningful relationships while managing these multiple roles? What skills, attitudes, and adaptations are needed to manage these relationships effectively? Observing how adults navigate these roles can help us understand how social interactions contribute to emotional well-being, interpersonal competence, and the ongoing development of the self. Understanding social development in adulthood involves examining the ways adults form partnerships, navigate family responsibilities, and maintain social connections that support personal and relational well-being.

The key aspects defining social development in adulthood include:

i. Formation and Maintenance of Intimate Relationships

Marriage and family constitute the central social contexts of adulthood, influencing both personal development and daily functioning. The decision to form a committed



partnership remains a central developmental task, although the forms these partnerships take have diversified. An enduring marriage is supported by several key factors, such as homogamy, or similarity in core values, interests, education, and background, and equity and perceived fairness, which is the long-term satisfaction that relies on the subjective feeling that contributions and rewards in the relationship, especially regarding household and child-rearing duties, are fair and balanced. Adults must negotiate roles and responsibilities with their partners and family members, balancing emotional support, practical needs, and shared decision-making. For example, a married couple may coordinate household chores and child-rearing responsibilities while supporting each other's career goals. Similarly, parents often manage school schedules, medical appointments, and extracurricular activities for their children while also making time for their own relationships and personal growth.

ii. Parenting and Family Roles

Parenting and family responsibilities play a central role in social development, and the transition to parenthood is among the most significant psychological transitions in adulthood. Adults must balance caregiving, education, and emotional support for children with other life responsibilities. For instance, a parent may coordinate school activities and household tasks while also helping a child cope with academic stress, demonstrating both organisational and emotional skills. Similarly, engagement in family roles strengthens social competence, empathy, and the ability to manage multiple responsibilities effectively. The stage characterising middle adulthood in Erik Erikson's theory of psychosocial development, generativity *versus* stagnation, focuses on adults' desire to contribute to the next generation and leave a meaningful legacy. This contribution can take many forms, such as parenting, mentoring, or involvement in community service. Successful resolution of this stage leads to a sense of purpose and fulfilment. In contrast, failure can lead to stagnation, characterised by self-absorption, feelings of unproductiveness, and disconnection from others, thereby increasing the risk of midlife crises and unfulfilment.

Empty Nest Syndrome

Empty nest syndrome refers to the psychological experience of sadness, loss, or emotional emptiness that some parents, particularly in midlife or later adulthood, may experience when their children leave home for college or other reasons. Symptoms such as grief, anxiety, and aimlessness typically characterise it. However, it is a normal life transition, not a clinical disorder, usually easing over time, though intense or prolonged feelings warrant seeking help. Coping involves rediscovering hobbies, reconnecting with partners, establishing new routines, and finding new purpose, while severe depression needs professional support.

iii. Intergenerational Relationships

Social development in adulthood extends beyond the nuclear family to include relationships with ageing parents, siblings, and extended family members. Adults often hold a middle position between generations, requiring them to respond to the needs of both older and younger family members. For example, an adult may help an ageing parent understand medical instructions or manage financial matters while also guiding a young adult child in making decisions about education or employment. These intergenerational relationships require empathy, communication, and role flexibility, contributing to the development of social understanding and adaptive social functioning in adulthood.

iv. Social Networks and Support Systems

In addition to family relationships, adults develop and maintain wider social networks that provide emotional, informational, and practical support. Friendships, workplace relationships, and community involvement play an important role in social development and well-being. For example, an adult may rely on colleagues for professional advice during career transitions, or turn to close friends for emotional support during periods of stress. Participation in neighbourhood groups, professional associations, or community organisations can also provide a sense of belonging and shared purpose. Such social networks strengthen resilience, support mental health, and enhance overall life satisfaction in adulthood.

5.2.4. Moral Development

Adulthood is a period in which individuals are expected to make decisions that affect not only themselves but also others. Choices related to work, family, relationships, and social responsibilities often involve questions of fairness, accountability, and concern for others. What guides adults when they must decide what is right or appropriate in complex situations where rules may not provide clear answers? Discussions on moral development in adulthood reflect how individuals reason about such situations, justify their choices, and take responsibility for the consequences of their actions. Adults increasingly consider context, intentions, and long-term consequences when making moral decisions. Moral development in adulthood involves changes in moral reasoning, judgement, and commitment to values. Understanding moral development, therefore, requires examining how moral thinking becomes more flexible, socially informed, and closely connected to real-life roles and responsibilities.

5.2.4.1. Kohlberg's Postconventional Level

Kohlberg proposed that the highest level of moral development, marked as the post-conventional level, is most likely to emerge during adulthood, although not all adults reach this stage. At this level, moral reasoning moves beyond conformity to social rules and expectations, and is guided instead by internalised moral principles that are evaluated critically rather than accepted unquestioningly. In the post-conventional level, individuals recognise that laws and social rules are human constructions designed to promote social welfare. As a result, they understand that rules may sometimes need to be questioned or changed when they conflict with fundamental moral principles such as justice, equality, or respect for human dignity. For example, an adult may judge a law as unjust if it discriminates against certain groups, even though it is legally enforced. Moral decisions at this level are based on reasoning rather than obedience or social approval.



Kohlberg described two stages within the post-conventional level.

Stage 5: Social Contract Orientation

Adults at this stage recognise that rules and laws are social agreements designed to serve the greater good, but should be changed if they no longer fulfil that purpose. An adult at this level understands that while laws are necessary for social order, they are not absolute; if a law becomes unjust or fails to serve the majority, it should be amended through democratic and rational processes.

Stage 6: Universal Ethical Principles Orientation

This is the final and highest stage of Lawrence Kohlberg's theory. While many adults operate at the conventional level (following laws), very few individuals consistently reach this stage, which is characterised by a commitment to internalised, abstract ethical principles. At this stage, 'right' and 'wrong' are determined by self-chosen ethical principles of conscience that are universal in application, such as justice, equality, and the inherent dignity of all human beings. Unlike earlier stages that rely on specific social rules or laws, reasoning here is based on abstract principles. Individuals do not just follow the law because it is the law; they adhere to it only if it aligns with these universal truths. If a law or social norm conflicts with a universal principle (e.g., a law that discriminates against a minority group), the individual feels a moral obligation to act in accordance with the principle rather than the law, often accepting the legal consequences of their actions as a form of *civil disobedience*. Thus, the key characteristic of this stage is the ability to adopt the perspectives of all persons or groups affected by a decision, aiming for a solution that is fair and just from a neutral, objective standpoint.

In adulthood, post-conventional moral reasoning is often expressed in situations involving professional ethics, social justice, or civic responsibility. For instance, a professional may refuse to participate in unethical practices at work despite pressure from superiors, or an individual may advocate for social change when existing norms violate moral principles. Such decisions reflect moral reasoning that is self-directed, principled, and reflective. However, it is important to note that post-conventional moral reasoning is context-dependent and relatively rare, as many adults continue to rely on conventional moral frameworks in everyday situations.

Gilligan's Ethics of Care

Gilligan's ethics of care emphasise moral reasoning based on relationships, empathy, and responsibility toward others rather than abstract principles or rules. Proposed by Carol Gilligan, this perspective emerged as a critique of Kohlberg's theory of moral development, which she argued was biased towards justice-oriented reasoning typically associated with male socialisation. Gilligan suggested that many individuals, particularly women, approach moral dilemmas by prioritising care, connectedness, and the prevention of harm, viewing morality as embedded in interpersonal contexts. The ethics of care thus highlight the importance of responsiveness, compassion, and mutual dependence in understanding moral development and ethical decision-making.



5.2.4.2. Key Characteristics of Moral Development in Adulthood

i. Moral Reasoning and Decision-Making

A central aspect of moral development in adulthood is the ability to reason about moral issues in complex and realistic contexts. Unlike earlier stages, where moral judgments may rely on fixed rules or authority, adults increasingly evaluate situations by considering fairness, care, and social responsibility. For example, a workplace supervisor may need to balance organisational policies with care for an employee facing personal difficulties. Such situations require adults to weigh competing values and arrive at judgments that are thoughtful and contextually appropriate rather than rigidly rule-bound.

ii. Influence of Social Roles and Responsibilities

Moral development in adulthood is significantly shaped by the social roles and responsibilities individuals assume. As individuals take on roles such as parent, professional, or community member, moral decisions become directly connected to the well-being of others, as these roles entail obligations and require moral decision-making. For instance, a parent may emphasise honesty and responsibility when guiding a child's behaviour, while a professional may be required to act with integrity when handling confidential information. Through repeated engagement with such roles, adults refine their moral reasoning and develop a stronger sense of responsibility towards others.

iii. Contextual and Relational Morality

Adult moral thinking is often context-sensitive and relational, recognising that moral decisions occur within social relationships. Adults understand that moral decisions do not occur in isolation but within ongoing relationships and social contexts, which involves considering intentions, circumstances, and the impact of one's actions on others. For example, an adult may choose to support a friend in difficulty, even when this involves personal sacrifice.

iv. Moral Commitment and Value Integration

Repeated moral decision-making within varied social contexts contributes to the development of stable moral commitments over time. Adults begin to integrate moral values into a coherent personal framework that guides behaviour across situations. Values such as honesty, justice, care for others, and social responsibility become increasingly central to self-identity. For example, an adult may consistently practise fairness in the workplace or engage in community service as an expression of personal values. Moral development in adulthood thus involves not only situational judgment but also the integration of values into everyday life and the pursuit of long-term goals.

5.2.5. Ageing and Well-Being

Ageing can be best understood as a developmental process that involves ongoing adjustment to biological, psychological, and social changes. However, ageing is often associated with physical decline, social withdrawal, and increasing dependence on others. Such assumptions typically shape how ageing is viewed both socially and personally.



At the same time, many adults continue to experience a sense of purpose, emotional balance, and social engagement well into later life, even while facing health-related or role-related changes. Why do individuals differ so markedly in their experiences of ageing and well-being?

Exploring this question requires moving beyond a purely biological view of ageing to consider the psychological and social factors that influence adjustment in later adulthood. Social relationships, the availability of support, and the ability to adapt to changing circumstances play a crucial role in shaping well-being. The study of ageing and well-being focuses on identifying the conditions under which adults continue to experience life as meaningful, satisfying, and socially connected despite age-related challenges, giving rise to the idea of successful ageing.

i. Social Support for Well-Being

Social support plays a central role in promoting well-being across adulthood and into later life, and serves as a fundamental buffer against the stressors of late adulthood. This support manifests primarily in three forms:

- a. **Emotional support:** This is the most foundational form of social assistance, encompassing the expression of empathy, love, trust, and care. In adulthood, this involves having a confidant, such as a spouse, close friend, or family member, who provides a sense of belonging and security.
- b. **Informational support:** This refers to the sharing of knowledge, advice, or feedback that helps an individual solve problems or navigate complex situations. This could take the form of a peer sharing tips on managing a chronic health condition, a professional providing financial planning advice for retirement, or a public organisation offering workshops on new technologies.
- c. **Instrumental support:** This involves the provision of tangible, practical assistance that helps an individual meet the demands of daily living. This can include financial aid, help with household chores, transportation to medical appointments, or assistance with personal care during illness. The availability of reliable instrumental support is a key factor in preventing social isolation and ensuring that physical limitations do not lead to a total loss of autonomy.

Emotional support helps individuals cope with experiences such as loss, illness, or uncertainty, while practical support assists in managing everyday tasks and responsibilities. Together, these forms of support act as protective factors, mitigating the adverse effects of age-related changes on psychological well-being. Research consistently indicates that adults with access to dependable social support report lower stress levels, greater emotional stability, and higher life satisfaction, even when they face health limitations or role changes associated with ageing.

ii. Ageing and Changes in Social Networks

As individuals move through later adulthood, their social networks often undergo significant changes. Life events such as retirement, relocation, declining health, or the loss

of close relationships may reduce the size or frequency of social interactions. At the same time, adults tend to place greater value on relationships that provide emotional closeness, trust, and support. However, this pattern may reflect an adaptive reorganisation of social networks rather than simple social withdrawal. Maintaining fewer but emotionally meaningful relationships can support well-being, provided that these relationships continue to meet emotional and practical needs. However, when changes in social networks lead to isolation or a lack of support, well-being may be adversely affected.

iii. Successful Ageing

Successful ageing is a multidimensional concept that extends beyond the mere absence of pathology to encompass a proactive approach to the later years of life. According to the influential model proposed by Rowe and Kahn, success in this stage is defined by the intersection of three critical components: the avoidance of disease and disability, the maintenance of high physical and cognitive functioning, and active engagement with social and productive activities. This perspective shifts the focus from a 'deficit' model of ageing, which views late adulthood solely as a period of decline, to a 'resource' model that emphasises the potential for continued growth, independence, and life satisfaction.

The framework of successful ageing views ageing as an active developmental process in which individuals modify goals, activities, and coping strategies to preserve quality of life. For example, an adult experiencing reduced mobility may adjust daily routines, seek assistive resources, or choose alternative forms of social participation to remain engaged. Such adjustments reflect effective adaptation rather than decline. Successful ageing is therefore shaped by both individual coping capacities and the availability of supportive social environments.

SOC Model

Developed by Paul and Margret Baltes, the SOC model explains how individuals successfully adapt and maintain well-being across the lifespan, especially during ageing, by managing resources to maximise gains and minimise losses through choosing goals (*selection*), investing in them (*optimisation*), and using alternative means when needed (*compensation*). Selection involves deciding which goals to pursue, often prioritising or narrowing them to focus on the activities that matter most as energy reserves diminish. Once these priorities are set, optimisation occurs through the continued practice and refinement of the skills necessary to maintain high performance in those specific areas. Finally, compensation involves using external aids or alternative strategies, such as using a digital organiser for memory or a cane for mobility, to bridge the gap between their current capabilities and their desired goals.



iv. Psychological Well-Being and Ego Integrity

In late adulthood, individuals enter what Erik Erikson identified as the final stage of psychosocial development, characterised by the conflict of *ego integrity versus despair*. According to Robert Butler, who expanded Erikson's theories, this stage necessitates a *life review*, a naturally occurring, universal, often unconscious process that older adults undertake to re-examine their past experiences, integrate them into a coherent life story, resolve conflicts, and achieve a sense of meaning and acceptance as they face mortality.

Ego-integrity is achieved when an individual views their life as a coherent and purposeful journey. They can accept both their triumphs and their disappointments with a sense of peace, ultimately attaining a state of wisdom that enables them to face the end of life without fear. In contrast, those who look back and see only missed opportunities, failed relationships, or unresolved goals may fall into despair, feeling that time is too short to start a new path, which often manifests as bitterness or depression.

According to Erikson, the successful resolution of this final stage results in the development of the ego strength or virtue of *wisdom*, which can be explained as 'the detached concern with life itself, in the face of death itself'. This allows the individual to maintain a sense of wholeness and heritage despite the physical decline of the body. Wisdom does not mean the absence of regret; rather, it entails the capacity to integrate such regrets into a broader, more compassionate understanding of the human condition.

Robert Butler

Robert N. Butler was an American psychiatrist and gerontologist best known for introducing the concept of life review, coining the term ageism, and pioneering the field of modern gerontology. His work focused on understanding the psychological experiences of ageing, particularly the role of reflection and meaning-making in later life. It contributed significantly to the application of Erikson's ideas on ego integrity and well-being in old age.

v. Well-Being Paradox

The well-being paradox refers to the empirical finding that, despite objective declines in physical health, cognitive processing speed, and social networks associated with ageing, older adults often report higher levels of subjective well-being and emotional stability than younger adults. This phenomenon suggests that ageing is not merely a process of deterioration but one of psychological resilience and emotional refinement. This paradox can be explained using two mechanisms:

- a. **Positivity effect:** According to socioemotional selectivity theory, as time horizons shrink, older adults demonstrate a cognitive bias toward positive information. They tend to attend to and remember positive images and experiences more than negative ones, which serves as a protective emotional buffer.
- b. **Advanced emotional regulation:** Through years of experience, older adults often develop superior strategies for managing their emotions. They are more

likely to avoid unnecessary interpersonal conflict and are better at mitigating negative experiences, thereby maintaining a more consistent and positive affective state.

Recap

- ◆ Cognitive development continues throughout adulthood.
- ◆ Adult cognitive development focuses on refining and applying existing skills to real-world tasks.
- ◆ Post-formal thought emerges as a fifth stage involving relativism and dialectical thinking.
- ◆ Dialectical thinking allows adults to synthesise contradictory ideas into new understandings.
- ◆ Fluid intelligence (logical reasoning) tends to decline gradually starting in early adulthood.
- ◆ Crystallised intelligence (accumulated knowledge) remains stable or improves throughout life.
- ◆ Emotional development is characterised by improved self-regulation and maturity.
- ◆ Adults prioritise emotionally meaningful relationships over casual social interactions.
- ◆ Coping strategies are divided into problem-focused actions and emotion-focused management.
- ◆ The transition to parenthood is a major psychosocial shift requiring new organisational skills.
- ◆ Erikson's stage of 'Generativity vs. Stagnation' involves contributing to the next generation.
- ◆ Intergenerational relationships place adults in a 'middle' position between children and parents.
- ◆ Post-conventional morality moves beyond social conformity to internalised ethical principles.
- ◆ Kohlberg's Stage 5 views laws as social contracts that can be changed for the greater good.
- ◆ Kohlberg's Stage 6 focuses on universal ethical principles such as justice and human dignity.

- ◆ Moral development in adulthood is highly influenced by social roles and life responsibilities.
- ◆ Social support manifests in three forms: emotional, informational, and instrumental.
- ◆ Successful ageing involves avoiding disability, maintaining function, and social engagement.
- ◆ Life review helps older adults resolve past conflicts and achieve a sense of meaning.
- ◆ The well-being paradox shows high life satisfaction despite physical and cognitive decline.
- ◆ The positivity effect involves a cognitive bias towards positive information in late life.

Objective Questions

1. Which type of thinking recognises that truth is contextual and subjective?
2. Which term describes integrating a thesis and an antithesis into a new synthesis?
3. Which intelligence type involves logic and pattern identification in new problems?
4. Which intelligence type is based on accumulated knowledge and vocabulary?
5. Which researcher focused on the crisis of generativity *versus* stagnation?
6. What is the term for the similarity in values and background between partners?
7. What is the term for perceived fairness in a relationship's rewards and costs?
8. Which level of Kohlberg's theory involves internalised ethical principles?
9. Stage 6 of moral development focuses on what kind of ethical principles?
10. What is the specific term for practical assistance, such as help with chores?
11. What is the provision of advice or feedback to solve a problem called?
12. What is the final stage of Erikson's psychosocial development?

13. What is the process of re-examining one's past to achieve meaning?
14. What is the virtue achieved through the successful resolution of ego integrity *versus* despair?
15. What paradox describes high happiness despite objective physical decline?
16. Which theory explains the shift towards positive information in late life?
17. What is the cognitive bias towards positive experiences in older adults?
18. What term describes a lack of productivity and self-absorption in midlife?
19. Laws are viewed as 'social agreements' in which moral stage of Kohlberg?
20. What type of thought characterises adult cognition beyond formal operations?
21. Which type of support provides empathy and care?
22. Which type of support provides advice and guidance?
23. Which type of support provides practical help?
24. What concept explains positive ageing outcomes?

Answers

1. Relativism
2. Dialectical thinking
3. Fluid intelligence
4. Crystallised intelligence
5. Erik Erikson
6. Homogamy
7. Equity
8. Post-conventional
9. Universal
10. Instrumental support



11. Informational support
12. Ego integrity versus despair
13. Life review
14. Wisdom
15. Well-being paradox
16. Socioemotional selectivity
17. Positivity effect
18. Stagnation
19. Stage 5
20. Post-formal thought
21. Emotional support
22. Informational support
23. Instrumental support
24. Successful ageing

Assignments

1. Discuss the characteristics of post-formal thought and how it differs from Piaget's formal operations.
2. Compare and contrast fluid and crystallised intelligence, explaining their trajectories across adulthood.
3. Describe Kohlberg's post-conventional level of morality, specifically distinguishing between Stage 5 and Stage 6.
4. Evaluate the three forms of social support (emotional, informational, instrumental) and their importance in late adulthood.
5. Describe the psychological process of the 'Life Review' and its role in achieving ego integrity.
6. How do problem-focused and emotion-focused coping strategies help adults manage major life transitions such as job loss or caregiving?

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**BLOCK
6**

Older Adults

Unit 1

Older Adults and Ageing

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ discuss the social perceptions of old age, including stereotyping and ageism
- ◆ examine the key policy issues in an ageing society
- ◆ explain the major theories of ageing

Prerequisite

Have you ever felt that ageing becomes visible only at certain moments, such as when someone is asked to retire, when a medical form requires an age category, or when time is suddenly described as *limited*? In everyday life, older adults often move between visibility and invisibility: they may be consulted for advice yet excluded from decision-making, respected for their experience yet quietly removed from spaces that prioritise speed and productivity. At the same time, many older adults report feeling internally continuous with their younger selves, even as society responds to them differently. This contrast between how ageing is lived and how it is socially organised raises important questions about what it truly means to grow older.

Ageing is neither a mere biological process nor simply a social label assigned by others. It involves the ongoing adaptation of the body, social engagement, and emotional priorities. Why do some individuals become more selective in their relationships, investing deeply in a few meaningful connections rather than expanding social networks? Why do activity and engagement enhance well-being for some older adults, while others find greater fulfilment in reflection, spirituality, or emotional closeness? As populations age globally, individual experiences intersect with broader policy concerns regarding health, care, and social participation. Understanding older adulthood, therefore, requires moving beyond linear ideas



of decline or activity alone, and towards theoretical perspectives that explain how biological processes, social involvement, emotional goals, and meaning-making together shape the experience of ageing.

Keywords

Longevity Dividend, Longevity Revolution, Social Age, Ageism, Stereotyping, Internalised Ageism, Dependency Ratio, Age-friendly Environments, Gerotranscendence, Activity Theory, Socio-Emotional Selectivity Theory

Discussion

6.1.1. Older Adults in Society

Imagine a world where, for the first time in human history, there are more people over the age of sixty-five than there are children under five. This is not a distant sci-fi premise, but a nearer reality. We are living through a *longevity revolution*, a dramatic increase in life expectancy brought about by advances in medicine, public health, nutrition, and social policies. However, while we have successfully added years to life through medicine and public policy, less progress has been made in ensuring quality of life within those added years.

This demographic shift is often referred to as the ‘greying of society’. While it is a testament to human progress, it challenges the traditional social structures built during eras when life expectancy was much shorter. Historically, many cultures viewed old age as a period of veneration, a time when elders served as the moral and cultural compass of the community. However, with the industrial revolution and the subsequent digital age, the emphasis has shifted toward speed, technological adaptability, and economic output.

To understand how older adults are positioned in society today, it is essential to distinguish between *chronological age*, which is the number of years a person has lived, and *social age*, the roles and behaviours that society expects as people grow older. Most of the challenges commonly associated with ageing arise not from the biological process of growing older, but as a factor of social age, the perception of old age. For instance, if retirement is viewed as a complete withdrawal from productive roles, the ‘invisible, but invaluable’ contributions of older adults in childcare, volunteering, mentoring, and family support may be overlooked. The study of older adults in society, therefore, involves exploring the contrast between two perspectives:

1. *The Dependency Ratio*, which focuses on the economic cost of supporting the older population.
2. *The Longevity Dividend*, which focuses on the benefits that a healthy, experienced, and engaged older population brings in.

While these perspectives help explain the economic implications of ageing, they do not fully capture the lived experiences of older adults. There is often a significant gap between what older adults are capable of doing and what is expected of them.

Therefore, understanding older adults in society requires looking beyond biological markers of ageing. The focus should instead be on the *social construction of age*, the idea that what it means to be ‘old’ is defined less by the body and more by the roles, expectations, and social status that gets assigned as individuals reach specific chronological milestones. The tension between these two views, older adults as a resource *versus* older adults as a responsibility, necessitates an enquiry into the psychological and systemic barriers they face. Before we can address the policies that govern an ageing world, we must first confront the mental models that dictate it.

6.1.1.1. Stereotyping and Ageism

If the previous section highlighted the social construction of age, this section examines the tools used to build that construction: stereotypes. Stereotypes are cognitive shortcuts, or generalised beliefs about a group that we use to process information quickly. In the context of ageing, these stereotypes tend to fall into two categories:

a. Compassionate Stereotypes (The ‘Kind but Incompetent’ View)

Some people hold positive stereotypes about the elderly, viewing them as warm, wise, or affectionate. While these may seem harmless, they often carry an underlying assumption of incompetence, which can lead to paternalism. This includes younger individuals making decisions on their behalf rather than involving them.

b. Punitive Stereotypes (The ‘Burden’ View)

These stereotypes present older adults in negative terms, emphasising physical weakness, cognitive decline, or difficulty adapting to change. Older adults may be seen as placing pressure on social and economic resources and as being unable to learn new skills or contribute effectively in a technologically evolving society.

Thus, stereotypes of older adults are often contradictory. However, even seemingly positive stereotypes can be limiting. Academic research often categorises these into four:

- a. **The Myth of Cognitive Decline (Myth of Senility):** The assumption that old age is synonymous with senility, and is inevitably associated with severe cognitive decline or an inability to learn. Although some aspects of cognitive processing, such as speed, may change with age, knowledge and skills acquired through experience (referred to as crystallised intelligence) often remain stable or continue to develop. Significant cognitive decline is therefore not an inevitable outcome of ageing.



- b. The Myth of Unproductivity:** The assumption that individuals stop contributing to society once they are no longer engaged in paid employment. Such a view overlooks the many unpaid contributions of older adults, including caregiving, grandparenting, and volunteer work, which constitute a significant part of the informal or 'invisible' economy.
- c. The Myth of Resistance to Change:** Older adults are often stereotyped as being unwilling or unable to adapt to social and technological changes. In reality, the ability to learn new skills or use new technologies varies widely among individuals and is influenced by access, motivation, and support rather than age alone.
- d. The Myth of Apathy:** The assumption that older adults lose interest in close relationships, intimacy, or social change can lead to the exclusion of older adults from media representation and community planning, reinforcing their social invisibility.

When these stereotypes are used to justify prejudice or discrimination, it is known as *ageism*. The most significant barrier to the social integration of older adults is ageism. Coined by gerontologist Robert Butler, ageism refers to the systematic stereotyping and discrimination of people based on their age. Much like other forms of prejudice, ageism operates by reducing a diverse group of individuals to a set of simplified, and often negative, characteristics. Ageism can be categorised into three types:

- *Institutional Ageism:* Refers to policies, rules, or practices within institutions that restrict opportunities based on age, such as fixed retirement ages applied regardless of an individual's competence.
- *Interpersonal Ageism:* Occurs in daily interactions, such as a doctor addressing a caregiver instead of the elder patient directly.
- *Self-directed Ageism:* Involves older adults internalising negative beliefs about ageing, such as the 'decline narrative', which may lead them to stop seeking new experiences because they view decline as inevitable.

Impact of Stereotyping and Ageism

Stereotyping and ageism have wide-ranging effects on the psychological well-being, social participation, and physical health of older adults. These effects operate at individual, interpersonal, institutional, and structural levels, often reinforcing one another.

i. Internalised Ageism

When older adults repeatedly encounter negative stereotypes about ageing, they may begin to accept these beliefs as accurate. This process, known as *internalised ageism*, can reduce self-esteem and self-efficacy. Older adults may avoid physical activity, social engagement, or learning new skills because they believe decline is inevitable. Such beliefs can result in a *self-fulfilling prophecy*, in which reduced activity and engagement contribute to actual physical and psychological decline, thereby reinforcing the original stereotype.

ii. Infantilisation

Infantilisation involves treating older adults as if they are childlike or incapable, often through overly simplified or exaggerated language. While usually intended to be caring, this behaviour undermines autonomy, dignity, and competence. Over time, infantilisation may lead to frustration, social withdrawal, and reduced psychological well-being.

iii. Social Exclusion

Age-based stereotypes can lead to the exclusion of older adults from social, economic, and civic life. In the workplace, older individuals may face discrimination through forced or early retirement. In community settings, their needs and perspectives may be overlooked in planning and decision-making processes. This exclusion limits opportunities for meaningful participation, thereby reinforcing stereotypes of older adults as marginal or irrelevant.

iv. Structural Exclusion

At an institutional level, ageism can become embedded in organisational policies and practices. For example, employers may impose informal age limits in hiring or restrict access to training opportunities on the assumption that older workers cannot adapt to new technologies. When older employees are denied training, their skills may become outdated, increasing the likelihood of unnecessary job loss or early retirement. In this way, stereotypes directly contribute to reduced productivity and workforce participation.

v. Healthcare Bias

Ageist assumptions also affect healthcare experiences. Healthcare providers may attribute symptoms in older adults to ‘normal ageing’ rather than identifying them as treatable conditions. As a result, older patients may receive less thorough assessments or less aggressive treatments. Such biases can delay diagnosis, reduce the quality of care, and negatively affect health outcomes.

Old Age *versus* Later Adulthood

The term, older adults draws attention mainly to age as a number, whereas later adulthood frames ageing as a meaningful stage within the broader lifespan. Describing this period as *later adulthood* highlights that development and adaptation continue, shaped by earlier life experiences and current contexts. It presents ageing not as a static endpoint but as an ongoing, dynamic phase of human development.

6.1.1.2. Policy Issues in an Ageing Society

The longevity revolution represents a structural challenge for modern societies rather than merely a demographic change. As more people live into later adulthood, policies designed for shorter life spans and younger populations must be re-examined. The central



policy question is not simply how to support a growing older population, but how to organise economic, health, and social systems effectively so that longer lives are lived with security, dignity, and participation. Policy issues in an ageing society, therefore, reflect how societies respond to longevity, either as a social burden or as a shared social achievement.

i. Economic Security and Retirement

One of the most pressing policy concerns in an ageing society is ensuring financial security in later life. As the proportion of older adults increases relative to the working-age population, the old-age dependency ratio rises, placing pressure on pension and social security systems. In response, many governments are shifting from fixed retirement ages to flexible retirement policies that allow older adults to work part-time or in consultative roles. Such policies not only support pension sustainability but also help preserve the longevity dividend by retaining the skills, experience, and knowledge of older workers. In addition, policy discussions also recognise the silver economy, which highlights the economic contribution of older adults as consumers in areas such as healthcare, housing, travel, and technology.

ii. Health and Social Care

Health policy in ageing societies must shift from short-term, hospital-based care to long-term management of chronic conditions. Traditional healthcare systems are designed mainly to treat acute illnesses, whereas older adults are more likely to live with chronic and multiple health conditions over long periods. Therefore, introducing integrated health and social care, in which medical, psychological, and social services work together rather than in isolation, is preferable. A key policy focus in this regard is *ageing in place*. This reflects the preference of older adults to remain in their own homes rather than move to institutional settings, and requires investment in home-based care services, affordable medication, mental health support, and coordination between healthcare providers. Policies also increasingly recognise the role of informal caregivers, such as family members. Support measures include caregiver allowances, tax benefits, and workplace protections, such as caregiving leave.

iii. Age-Friendly Environments and Urban Planning

The physical and social environment plays a significant role in shaping the quality of life in old age. In response, policy frameworks such as the World Health Organisation's *Age-Friendly Cities* initiative emphasise inclusive urban design. This includes accessible infrastructure, such as public transport, safe pedestrian crossings, adequate seating in public spaces, and housing designed in accordance with universal design principles, such as stair-free access and wider doorways.

Age-Friendly Cities and Communities

As noted on the World Health Organisation's website, the Global Network for Age-friendly Cities and Communities was established by the WHO in 2010 to connect cities, communities, and organisations worldwide with the shared vision of making their communities great places to grow old in. In response to the ageing global population and rapid urbanisation, it focuses on local-level action to foster the full participation of older people in community life and promote healthy and active ageing.

The mission of the network is to stimulate and enable cities and communities worldwide to become increasingly age-friendly. The network seeks to achieve this by:

- ◆ inspiring change by demonstrating what can be done and how it can be done;
- ◆ connecting cities and communities worldwide to facilitate the exchange of information, knowledge, and experience; and
- ◆ supporting cities and communities to find appropriate, innovative, and evidence-based solutions.

Membership in this network is not an accreditation for age-friendliness. Instead, it reflects these cities' commitment to listening to the needs of their ageing population, assessing and monitoring their age-friendliness, and working collaboratively with older people and across sectors to create age-friendly physical and social environments. Membership also signifies a commitment to share experiences, achievements, and lessons learned with other cities and communities.

Several cities in India have joined the WHO Global Network for Age-friendly Cities and Communities, demonstrating local commitment to age-friendly development. Kochi became the first city in India and the second in the WHO South-East Asia Region to join the network, committing to creating inclusive, accessible environments that support healthy, active ageing across domains such as transportation, housing, social participation, and health services. More recently, Kozhikode has joined the network, reinforcing efforts to enhance the dignity, participation, and well-being of older adults through community programmes, inclusive public spaces, and improved access to care. Chandigarh, Pune, Coimbatore, Mysore, and Dehradun are the other Indian cities that have joined the network, becoming part of the global initiative to assess and adapt urban environments to better meet the needs of their ageing population.



iv. Digital Inclusion and the Digital Divide

As essential services such as banking, healthcare, and government administration move online, digital exclusion has emerged as a critical policy issue. Older adults are particularly at the risk of exclusion when digital systems are designed without consideration of age-related changes in vision and motor skills, or prior exposure to technology. Policies must therefore promote digital inclusion through accessible design, tailored digital literacy programmes, and ongoing technical support. At the same time, non-digital alternatives must remain available to ensure that access to essential services does not become conditional on digital competence. Addressing digital exclusion is increasingly viewed as a matter of social equity and human rights.

v. Legal Protection and Rights of the Elderly

An ageing society also requires strong legal frameworks to protect the rights and dignity of older adults. Policies must address various forms of elder abuse, including physical, emotional, and financial abuse, through prevention, reporting mechanisms, and legal safeguards. Equally important is ensuring that older adults retain autonomy in medical, financial, and legal decision-making. Policy must balance protection with respect for independence, avoiding overly paternalistic approaches that undermine self-determination.

In short, effective policy responses to population ageing require a shift from crisis management to long-term, proactive planning. An age-inclusive policy framework recognises older adults as active members of society whose well-being reflects the values and priorities of the social system as a whole.

Policy Issues in an Ageing Society: Illustrations from the Indian Context

India is witnessing rapid growth in its ageing population, driven by increased life expectancy alongside persistent social and economic inequalities. While family-based care has traditionally played a central role in supporting older adults, changing family structures, migration, and urbanisation have made public policy interventions increasingly important. In response, Indian ageing-related policies have evolved to address key areas of vulnerability in later life, including health security, income protection, social participation, and dignity, although gaps in coverage and implementation persist.

Health Security and Geriatric Care

Health-related vulnerabilities constitute the most critical challenges of ageing. Indian health policies have gradually recognised that older adults require specialised, continuous, and coordinated care rather than episodic medical interventions. The *National Programme for Health Care of the Elderly (NPHCE)* represents a significant step in this direction, aiming to integrate geriatric services across primary, secondary, and tertiary levels of the healthcare system. Its emphasis on preventive care, management of chronic illnesses, and rehabilitation reflects an understanding of ageing as a long-term health trajectory rather than a series of isolated conditions.

Complementing this approach, health insurance initiatives such as *Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (PM-JAY)* seek to reduce the costs of hospitalisation, which disproportionately affect older adults due to higher medical needs. Despite these provisions, access remains uneven. Older adults in rural areas, those with mobility limitations, and individuals without family support often face barriers in utilising health services, highlighting a persistent gap between policy intent and practical reach.

Economic Security and Income Support

Income insecurity remains a defining concern for ageing populations in India, particularly given the dominance of informal employment and limited pension coverage. Many older adults enter later life without stable retirement benefits, increasing their dependence on family or state assistance. The *Indira Gandhi National Old Age Pension Scheme (IGNOAPS)* addresses this vulnerability by providing basic financial support to older persons living below the poverty line. Although the pension amount is modest, the scheme holds symbolic and practical importance. It reflects a growing acknowledgment of the state's responsibility to ensure a minimum level of economic security in later life. However, delays in disbursement, variations across states, and inadequate benefit levels limit its effectiveness in addressing poverty and economic dependence among older adults.

Social Participation and Age-Friendly Initiatives

Recognising that well-being in later adulthood extends beyond health and income, Indian policies increasingly emphasise social participation and inclusion. Community centres, senior citizens' associations, and lifelong learning initiatives provide opportunities for social engagement, collective identity, and mutual support. Such initiatives challenge the notion of older adults as passive dependents and instead promote active and meaningful ageing.

Urban policy discussions have also begun to incorporate age-friendly planning principles, including accessible public transport, barrier-free buildings, and inclusive public spaces. National initiatives such as the *Accessible India Campaign* aim to improve physical accessibility in public infrastructure, indirectly supporting older adults' mobility and independence. Nevertheless, participation opportunities remain uneven, particularly for older adults in rural or economically disadvantaged settings, underscoring the need for locally grounded and community-based interventions.

Dignity, Rights, and Legal Protection

The principle of dignity occupies a central place in ageing policy discourse. Legal measures such as the *Maintenance and Welfare of Parents and Senior Citizens Act, 2007*, formalise the obligation of children and relatives to provide for ageing family members and mandate the establishment of old-age homes at the district level. This legislation reflects the recognition that ageing-related vulnerability requires formal



legal protection, especially where traditional family support systems weaken. However, dignity in ageing extends beyond legal safeguards. It involves respecting older adults' autonomy, ensuring their participation in decision-making, and challenging ageist assumptions embedded in institutional and social practices. While Indian policy frameworks increasingly acknowledge this broader understanding of dignity, implementation remains uneven across regions, shaped by administrative capacity, social attitudes, and local priorities.

6.1.2. Spirituality and Later Adulthood

In psychological terms, spirituality refers to an individual's search for meaning, purpose, connectedness, and coherence in life. It may involve beliefs about transcendence or the sacred, but it is not limited to formal religion. Spirituality can be expressed through personal reflection, ethical values, relationships, engagement with nature, or a sense of connection to something larger than oneself. In contrast to religiosity, which is typically organised and institution-based, spirituality is broader, more subjective, and developmentally shaped.

In later adulthood, spirituality often becomes closely linked to developmental tasks such as life review, acceptance of change, and integration of past experiences. As individuals confront physical decline and changing social roles, and with increasing awareness of mortality, spirituality can provide a framework for understanding these experiences without reducing them to loss alone. It helps older adults interpret ageing as part of a meaningful life trajectory rather than as a period defined solely by decline. These processes are reflected in both developmental theories of ageing and in the characteristic ways spirituality is expressed in later life.

6.1.2.1. Theoretical Perspectives

Developmental theories offer useful frameworks for understanding how spirituality becomes more salient in later adulthood. In particular, psychosocial and gerontological theories highlight how older adults seek meaning, coherence, and acceptance as they reflect on their lives.

a. Erikson's Perspective: Ego Integrity *versus* Despair

Within the framework of Erik Erikson's psychosocial theory of development, Erikson's final stage, *ego integrity versus despair*, provides the psychological foundation for understanding spirituality in later adulthood. He viewed spirituality and mature ethics as the core of the ego identity in later adulthood. According to Erikson, in later adulthood, the spiritual and ethical dimensions become central to holding the self together, providing a vertical or transcendent identity that complements the horizontal one. Erikson believed that spiritual belief helps counter the sense of despair that can arise when individuals confront their own mortality. For Erikson, true spirituality manifests as ethical conduct and a commitment to caring for future generations, rather than self-preoccupied ego concerns. The goal is a unified collective that cares for all humans, transcending individual

prejudices. Thus, Erikson regarded spirituality as a key integrated component of healthy adult identity, particularly in the attainment of wisdom in later life.

b. Gerotranscendence

The theory of gerotranscendence, proposed by Lars Tornstam, posits that ageing entails a gradual shift from a materialistic, self-centred worldview towards a more cosmic, transcendent perspective. According to this view, spirituality in later adulthood reflects a deeper sense of connection to life, time, and existence, rather than a withdrawal from reality. The theory, however, suggests that this shift typically involves three levels:

- *The Cosmic Level:* A decreased fear of death and a renewed sense of connection to past and future generations.
- *The Self Level:* A decrease in self-centeredness and a shift away from concern with body image or material possessions.
- *The Social Level:* A move away from superficial social interactions in favour of deeper, more meaningful connections, or even a newfound appreciation for solitude.

Together, these theoretical perspectives suggest that spirituality in later adulthood is not merely a response to decline but part of a broader developmental process. Building on these ideas, the following discussion outlines the general features of spirituality commonly observed in later adulthood, highlighting how spiritual expression often becomes more reflective, inward-oriented, and meaning-focused during this stage of life.

6.1.2.2. Key Features of Spirituality in Later Adulthood

i. Orientation Toward Meaning and Life Coherence

Older adults often engage in meaning-making processes that involve evaluating the significance and coherence of their life experiences. Spirituality supports this orientation by providing interpretive frameworks through which past events can be understood as part of a meaningful whole. This process aligns directly with Erikson's stage of ego integrity, in which the individual seeks acceptance of life as it has been lived.

ii. Acceptance of Ageing and Mortality

Spirituality in older adulthood often involves acceptance of biological ageing and awareness of mortality. Rather than avoidance or denial, spiritual orientations may enable individuals to incorporate finitude into their self-concept. This acceptance reduces death anxiety and supports emotional equilibrium, a key outcome of successful psychosocial development according to Erikson's framework.

iii. Sense of Connectedness Beyond the Self

Spirituality in later life is frequently associated with an expanded sense of connectedness, such as to others, to the broader community, to nature, or to transcendent ideals. Psychologically, this connectedness counters isolation and reinforces continuity of identity, even as social roles change.

iv. Function as a Coping Resource

Spiritual beliefs and practices may serve as coping mechanisms during illness,



bereavement, and functional decline. From a psychological standpoint, spirituality contributes to coping by providing emotional regulation, perceived control, and meaning-focused coping strategies, thereby supporting resilience in later adulthood. Research consistently shows a positive correlation between spiritual involvement and higher levels of life satisfaction, lower rates of depression, and better cognitive function in older adults.

v. Individual and Cultural Variability

It is important to emphasise that spirituality is not universal nor uniform among older adults. Expressions of spirituality vary widely across cultural contexts, personal histories, and individual belief systems. Psychology recognises spirituality as one possible pathway to well-being and ego integrity, not as a normative requirement of ageing.

6.1.3. Theories of Ageing

What does it mean to grow old? Ageing is often accepted as a natural accompaniment of time and is rarely questioned in everyday thinking. Yet, growing older involves more than the simple passage of years; it reflects patterned changes in functioning, roles, and ways of relating to the world. To make sense of these changes, psychology turns to theories of ageing, which aim to explain the underlying processes and regularities of ageing rather than merely describing its visible outcomes.

Theories of ageing are broadly divided into two categories based on how they explain the causes of ageing.

1. Programmed Theories of Ageing
2. Damage Theories of Ageing

Programmed theories of ageing propose that ageing follows a predetermined biological timetable that regulates growth, development, and eventual decline. In contrast, *damage theories of ageing* explain ageing as the result of the gradual accumulation of cellular and molecular damage over time, arising from both internal processes and environmental influences. Together, these categories represent two primary ways of understanding why ageing occurs and how age-related changes emerge across the lifespan.

While this broad classification helps explain general aspects of ageing, the present discussion focuses on selected theories that highlight biological processes and psychosocial patterns of ageing.

6.1.3.1. Biological Theories of Ageing

Biological theories aim to explain the physiological processes underlying senescence, which is marked by the gradual deterioration of functional characteristics. These theories explain ageing as a result of changes that occur at the cellular, genetic, and organ-system levels over time. Some key biological theories include:

- ***Wear and Tear Theory***: This theory suggests that ageing is an inevitable process driven by the gradual accumulation of physical and chemical damage to cells and tissues over time. This perspective posits that the body's mechanical systems eventually fail because the rate of environmental and metabolic injury surpasses

the biological capacity for self-repair.

- **Genetic Theory:** This theory posits that ageing is not a random byproduct of environmental damage, but rather a predetermined biological process governed by an organism's genome. It proposes that ageing is influenced by genetic factors, such as the shortening of telomeres, which are the protective caps on the ends of chromosomes that eventually reach a critical threshold, triggering a DNA damage response, leading to the permanent cessation of cell division.
- **Free Radical Theory:** This theory suggests that unstable molecules or free radicals produced during metabolism damage our cells and DNA over time, leading to the physical signs of ageing.
- **Immunological Theory:** This theory posits that the gradual decline and dysfunction of the immune system with age is a primary driver of the ageing process, leading to increased vulnerability to infections, cancer, and chronic diseases, causing tissue damage and ultimately system failure.
- **Cellular Senescence (Programmed Longevity) Theory:** This theory proposes that ageing results from the progressive loss of a cell's ability to divide and function effectively. Over time, cells enter a state of senescence, in which they remain alive but no longer replicate or perform optimally. This process is partly regulated by genetic programming and influenced by mechanisms such as telomere shortening. The accumulation of senescent cells contributes to tissue deterioration, reduced regenerative capacity, and functional decline associated with ageing.

Biological theories are important because they provide a structured scientific framework for identifying the specific physiological mechanisms that drive senescence and explain why physical decline and vulnerability to illness increase with age. However, they primarily focus on the body and often fail to account for the complex interplay of factors that causes significant variation in lifespan across species and individuals.

6.1.3.2. Psychosocial Theories of Ageing

a. Activity Theory

Activity theory is a psychosocial theory that emphasises the importance of continued engagement in activities and social roles in later life. Developed in response to the notion that older adults should 'disengage' from society, activity theory posits that successful ageing occurs when older adults remain active and maintain social interactions, as they did in middle adulthood. It emphasises that continued participation in meaningful activities and social connections promotes positive ageing outcomes, even as physical or social circumstances change.

While activity theory highlights the benefits of engagement, it has been criticised for assuming that all older adults should remain equally active. Individual differences in health, preferences, and life circumstances are also important factors.

b. Socio-Emotional Selectivity Theory

Unlike activity theory, which emphasises activity, socio-emotional selectivity theory focuses on the quality of activity in later adulthood. This theory explains how older adults



prioritise social and emotional goals. According to this theory, as people become more aware of limited time in later life, they shift their focus from acquiring new information to maximising emotional meaning. Older adults tend to reduce the size of their social networks but maintain emotionally close and meaningful relationships that provide emotional satisfaction, security, and support.

This theory thus explains why older adults may appear less socially active yet report high levels of emotional well-being. The reduction in social interaction is understood as a selective and adaptive process, rather than as withdrawal or disengagement. Socio-emotional selectivity theory helps explain age-related changes in motivation, emotion regulation, and relationship patterns, offering a balanced view of ageing that integrates psychological adaptation with social context.

c. Disengagement Theory

Disengagement theory proposes that ageing involves a gradual and mutual withdrawal between the individual and society, allowing both to adapt to the changing realities of later life. As people grow older, they may voluntarily reduce their involvement in social roles, responsibilities, and relationships, while society simultaneously limits their participation through retirement and changing expectations. This process is viewed not necessarily as a decline, but as a natural and functional adjustment that enables older adults to reflect, reorganise priorities, and prepare psychologically for the end of life. By gradually disengaging from previous roles and external demands, individuals can shift their attention toward inner experiences, personal meaning, and emotional satisfaction. At the same time, society creates space for younger generations to assume roles and responsibilities, ensuring continuity of social functioning. Although the theory has been criticised for assuming withdrawal as universal and desirable, it remains important for highlighting how changing social participation may be one pathway of adaptation in later adulthood.

Recap

- ◆ The 'greying of society' refers to a historic demographic shift toward older populations.
- ◆ Social age reflects the roles and behaviours society expects based on chronological milestones.
- ◆ The 'longevity dividend' focuses on the social benefits of an engaged older population.
- ◆ Compassionate stereotypes view elders as 'kind but incompetent,' leading to paternalism.
- ◆ The myth of unproductivity overlooks invisible contributions like childcare and volunteering.
- ◆ Ageism involves systematic discrimination and simplified negative beliefs

about the elderly.

- ◆ Internalised ageism occurs when elders accept negative stereotypes, leading to self-fulfilling decline.
- ◆ Infantilisation undermines dignity by treating capable adults like children.
- ◆ Healthcare bias can lead to doctors dismissing treatable symptoms as ‘normal ageing.’
- ◆ ‘Ageing in place’ policies support elders living in their own homes rather than institutions.
- ◆ Spirituality is a subjective search for meaning, distinct from institutional religiosity.
- ◆ Spirituality provides an interpretive framework to view life as a meaningful whole.
- ◆ Gerotranscendence involves a shift from a self-centred to a cosmic worldview.
- ◆ Programmed theories of ageing suggest ageing follows an internal biological timetable.
- ◆ Damage theories, such as wear and tear, cite the accumulation of external injury.
- ◆ The genetic theory highlights the role of telomeres in triggering cellular senescence.
- ◆ Free radical theory attributes ageing to unstable molecules damaging cells and DNA.
- ◆ Activity theory argues that successful ageing requires maintaining high social engagement.
- ◆ Socio-emotional selectivity theory explains that older adults selectively narrow social circles to enhance emotional meaning.
- ◆ Disengagement theory suggests that ageing involves a gradual and mutual withdrawal between the individual and society, enabling adjustment to changing roles and life priorities.

Objective Questions

1. Which term describes the increase in life expectancy across populations?
2. Which perspective emphasises the benefits of an experienced ageing population?



3. Which type of ageism involves elders believing 'decline' is inevitable for themselves?
4. Who coined the term 'ageism'?
5. What is the term for overly simplified or 'baby talk' used with older adults?
6. Which myth suggests older adults cannot learn new technological skills?
7. What is the ratio that measures the economic cost of supporting an older population?
8. Which economic term refers to the consumption power of older adults?
9. What is the preference for staying in one's own home while ageing called?
10. Which initiative by the WHO promotes inclusive urban design?
11. Which theory was proposed by Lars Tornstam?
12. At which level of gerotranscendence does a person feel more connected to past generations?
13. Which theory explains ageing as the result of cellular damage over time?
14. What are the protective caps on the ends of chromosomes called?
15. Which biological theory focuses on unstable molecules during metabolism?
16. Which theory posits that the immune system's decline drives ageing?
17. Which psychosocial theory stresses continued engagement?
18. Which theory suggests that social circles shrink but become more meaningful?
19. What is the term for institutional rules that force retirement regardless of skill?
20. Which stereotype frames older adults as warm but incompetent?
21. Which stereotype portrays older adults as a social burden?
22. Which form of ageism is embedded in institutional policies?
23. Which form of ageism occurs in everyday interactions?
24. Which form of ageism involves self-acceptance of negative beliefs?

25. Which policy approach focuses on designing environments that support active and independent ageing?
26. Which theory proposes a shift towards a cosmic perspective?
27. Which level of gerotranscendence involves reduced fear of death?
28. Which type of intelligence remains stable with age?
29. Which policy issue addresses online access barriers?
30. Which concept explains ageing as socially constructed?

Answers

1. Longevity Revolution
2. Longevity Dividend
3. Self-directed Ageism
4. Robert Butler
5. Infantilisation
6. Myth of Resistance
7. Dependency Ratio
8. Silver Economy
9. Ageing in Place
10. Age-Friendly Cities
11. Gerotranscendence
12. Cosmic Level
13. Damage Theory
14. Telomeres
15. Free Radical Theory



16. Immunological Theory
17. Activity Theory
18. Socio-emotional Selectivity
19. Institutional Ageism
20. Compassionate stereotype
21. Punitive stereotype
22. Institutional ageism
23. Interpersonal ageism
24. Self-directed ageism
25. Age-friendly environments
26. Gerotranscendence
27. Cosmic level
28. Crystallised intelligence
29. Digital divide
30. Social construction

Assignments

1. Discuss how stereotyping contributes to ageism, using examples from everyday life and institutions.
2. Analyse the four major myths of ageing and explain how they contribute to social invisibility.
3. Compare and contrast institutional, interpersonal, and self-directed ageism with real-world examples.
4. Explain how 'ageing in place' policies improve quality of life compared to institutionalisation.

5. Evaluate the theory of gerotranscendence and its three levels of developmental change.
6. Compare biological and psychosocial theories of ageing with reference to adaptation and decline.
7. Critically assess activity theory and socio-emotional selectivity theory in explaining successful ageing.

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Unit 2

Facing Death

Learning Outcomes

Upon completion of the unit, the learner will be able to:

- ◆ discuss the concepts of meaning and purpose in life and death from a psychological perspective
- ◆ examine the psychological responses involved in confronting one's own death across different stages of adulthood
- ◆ describe and evaluate the stages of grief proposed by Kübler-Ross

P rerequisite

When did you first encounter death, not as a distant event that happens at the end of life, but as a possibility that quietly accompanies living itself? Long before individuals experience loss directly, death exists as an unspoken background to human life, shaping how time is understood and how continuity is assumed. This awareness often emerges gradually: through observing illness, ageing, or separation, or through moments when the future no longer feels limitless. Such experiences do not merely introduce the idea of death; they alter how life is perceived, bringing questions of meaning, purpose, and finitude into sharper focus.

Confronting death, whether one's own or that of others, elicits a range of emotional and cognitive responses that vary across individuals and across the lifespan. Some respond with fear, denial, or anger, while others turn towards acceptance, reconciliation, or renewed purpose.

How do people grieve, and why does grief take different forms at different stages of life? Is loss experienced similarly by a child, an adult, and an older person, or does its meaning change with developmental context and life experience? What if death is not something that interrupts life, but something that silently organises it? Do people grieve only because life ends, or because death reveals what life has

always demanded from them? What would life be without death? Let these questions linger, throughout the unit and beyond.

Keywords

Terminal Drop, Anticipatory Grief, Social Death, Symbolic Immortality, Preparatory Depression, Universality, Irreversibility, Gerotranscendence

Discussion

6.2.1. Meaning and Purpose in Life and Death

What is death? In biological terms, death is the permanent cessation of vital bodily functions. From a psychological perspective, death refers to the irreversible end of conscious experience and personal identity accompanying biological cessation. But is death only encountered once, at the end? Or, does it enter human experience much earlier through awareness, anticipation, fear, and reflection? What would life be without death? Have you considered this before? Has it ever occurred to you that it is the awareness of death that precipitates an awareness of life, its meaning and purpose?

i. Meaning in Life and Death

From a psychological perspective, meaning in life refers to the perception that one's existence is coherent, purposeful, and worthwhile. From a developmental perspective, the search for meaning continues across the lifespan but becomes particularly significant in later adulthood. As individuals grow older, they are more likely to reflect on their past, evaluate life choices, and consider the overall significance of their existence. This has been studied across developmental, existential, and humanistic perspectives. The final stage in Erikson's psychosocial theory of development provides a key theoretical framework for understanding the meaning *in* life and death. According to Erikson, ego integrity develops when individuals accept their life as meaningful and complete, despite imperfections. This acceptance enables individuals to face death without overwhelming fear. In contrast, failure to achieve ego integrity may result in despair, characterised by regret, dissatisfaction, and fear of death.

ii. Purpose in Life during Later Adulthood

Purpose in life refers to the feeling that one's actions and existence have direction and value. In later adulthood, purpose is often derived from non-achievement-based sources rather than from occupational success or productivity. Instead, older adults frequently derive meaning from relationships, caregiving roles, transmission of values, and



personal beliefs. Theoretical perspectives on motivation in ageing provide insight into this shift. Socioemotional selectivity theory, for example, suggests that as individuals become more aware of life's finiteness, they prioritise emotionally meaningful goals over long-term or achievement-oriented goals. This reorganisation of priorities helps explain why purpose in later life is closely linked to emotional fulfilment, personal values, and close relationships, rather than long-term ambitions. Such goal reorganisation supports emotional well-being and enhances acceptance of life's finitude.

iii. Understanding Death as an Event in Life

Existential psychology emphasises the awareness of death as a central condition of human existence. From this perspective, confronting mortality can prompt individuals to reflect on their lives, seek meaning, and live authentically. With advancing age, this awareness often leads to acceptance of life's limitations and a clearer understanding of personal values. Viktor Frankl's concept of meaning-making reinforces this view, positing that even in the face of suffering and inevitable death, people can find purpose. For older adults, such meaning-making supports psychological resilience, emotional stability, and a sense of fulfilment despite physical decline or loss.

Viktor Frankl and Logotherapy

Viktor E. Frankl was an Austrian psychiatrist and neurologist who developed logotherapy, an existential approach to psychotherapy grounded in the human search for meaning. Frankl's ideas were shaped by both his clinical work and his experiences as a holocaust survivor, which led him to emphasise meaning as a central motivational force in human life.



Fig. 6.2.1. Viktor Frankl (1905-1997)

At the core of logotherapy is the assumption that the primary drive in human beings is the will to meaning, rather than the pursuit of pleasure or power.

According to Frankl, psychological distress often arises when individuals experience an *existential vacuum*, a sense of emptiness, purposelessness, or loss of meaning. Logotherapy seeks to help individuals discover meaning even in situations of suffering, limitation, or unavoidable adversity.

iv. Cultural and Spiritual Frameworks on Life and Death

Cultural and spiritual belief systems influence psychological understanding of life and death. These frameworks offer shared interpretations of existence, mortality, and what may follow physical death, providing individuals with meaning and context for life's transitions. Such beliefs can help regulate emotions, reduce anxiety related to death, and foster acceptance of life's finitude. From a developmental perspective, cultural and spiritual frameworks serve as cognitive and emotional resources that guide individuals in understanding, coping with, and integrating the reality of death into their broader life narratives. In later adulthood, these frameworks often play a central role in shaping end-of-life attitudes, supporting resilience, and promoting a sense of continuity, legacy, and purpose.

v. Psychological Significance of Meaning in Life and Death

Theoretical and empirical studies in psychology suggest that meaning and purpose act as protective factors in later adulthood. Individuals who perceive their lives as meaningful are more likely to approach death with acceptance and emotional stability. This understanding helps explain why some older adults show acceptance and calmness when facing death, while others experience distress. Recognising the role of meaning provides a foundation for examining psychological responses to death, grief, and bereavement across the lifespan, highlighting how purpose can support resilience and emotional well-being in the face of life's final transitions.

6.2.2. Psychological Issues: Confronting One's Death

Confronting one's own death is one of the most profound psychological challenges across adulthood, becoming particularly salient in later life. It involves more than recognising mortality, and requires engagement with the emotional, cognitive, and existential implications of life's finitude. Awareness of impending death can evoke a range of psychological responses, from anxiety and fear to reflection, acceptance, and even resilience. How individuals experience these responses depends on multiple factors, including personality, past experiences, cultural and spiritual beliefs, and social support. Studying these responses helps us understand how older adults adapt, find meaning, and maintain emotional well-being in the face of death.

a. Fear and Anxiety

Fear of death is a common and natural psychological response. Older adults may experience anxiety about the process of dying, the loss of independence, or the unknown aspects of what lies beyond life. Such fears can influence behaviour, leading to avoidance of discussions about death, heightened health concerns, or preoccupation with mortality. Death anxiety is, however, not a simple fear of non-existence, but a multidimensional



construct. Researchers typically categorise it into four distinct domains.

- i. *Fear of the Dying Process*: Anxiety about experiencing physical pain or losing control over the body.
- ii. *Fear of Prematurity*: Distress over leaving important life goals incomplete or not having enough time to achieve personal plans.
- iii. *Fear for Survivors*: Concern for the emotional, social, or financial well-being of family and loved ones after one's death.
- iv. *Fear of the Unknown*: Existential concern about what happens after death, including uncertainty about the afterlife or the possibility of non-existence.

However, contrary to popular belief, death anxiety is not highest among the elderly. Longitudinal studies show a curvilinear relationship where anxiety peaks in middle adulthood as one realises life is half over and diminishes in late adulthood as individuals achieve ego integrity.

b. Denial and Avoidance

Denial is a psychological mechanism through which individuals minimise or reject the reality of death. While often protective in the short term, prolonged denial may limit the ability to engage meaningfully with one's life, relationships, or personal goals. For some older adults, avoidance manifests as reluctance to discuss end-of-life planning or confront personal losses. Psychologists note that carefully guided reflection and supportive counselling can help individuals gradually acknowledge mortality, creating space for acceptance and purposeful living.

c. Existential Distress and Regret

Confronting death often brings existential questions to the forefront. Older adults may reflect on unresolved conflicts, unachieved goals, or perceived failures, which can lead to feelings of regret or despair. This stage is central to Erikson's ego integrity *versus* despair, in which individuals assess the coherence and value of their life experiences. Life review, a structured reflection on past experiences, helps integrate successes and failures, reduces existential distress, and fosters a sense of a life fully lived.

d. Acceptance and Integration

Some individuals reach a level of acceptance in which the reality of death is acknowledged and integrated into their understanding of life. Acceptance is often associated with emotional stability, a sense of completion, and the ability to maintain meaningful relationships. The development of acceptance may involve revisiting personal values, reconciling past conflicts, and fostering a sense of spiritual or existential meaning. Existential and humanistic perspectives, particularly the work of Viktor Frankl on meaning-making, emphasise that even in the face of mortality, individuals can find purpose, resilience, and psychological growth.

e. The Dying Trajectory

The psychological experience of dying is shaped by the dying trajectory, defined as the perceived course of physical and functional decline.

- *Lingering Trajectory*: Common in chronic illnesses such as cancer or organ failure, this trajectory involves a prolonged period of decline. It allows both the individual and their family to engage in anticipatory grief, preparing emotionally for the eventual death. However, it can also lead to social death, where the person is treated as if they are already gone by themselves and others.
- *Sudden Trajectory*: Occurring in accidents or acute medical events, such as a heart attack, this trajectory avoids prolonged suffering for the individual but can increase complicated grief among survivors.

f. Cognitive Markers (Terminal Drop)

Psychologists observe a specific phenomenon known as terminal drop (or terminal decline). This refers to a significant, precipitous decline in cognitive functioning, specifically in crystallised intelligence and verbal ability, occurring roughly one to five years before death. Terminal drop often serves as an internal cue to the individual that their biological systems are failing, triggering psychological shifts such as withdrawal, reflection, and preparation for the end of life.

g. Developmental and Cultural Considerations

Responses to mortality are not universal; they vary across cultures and social contexts. Religious and spiritual beliefs often provide frameworks for interpreting death and coping with loss, while social support can buffer anxiety and promote emotional well-being. In later adulthood, confronting death is more immediate and often more psychologically significant, prompting reflection, goal reprioritisation, and deeper engagement with life's meaning.

h. A 'Good Death'

Modern health psychology extends beyond coping with death to consider what constitutes a psychologically dignified or 'good' death. It describes a good death as one in which the individual's psychological and emotional needs are respected. Key criteria include:

- *Autonomy and Agency*: Autonomy serves as a psychological buffer against learned helplessness, allowing individuals to maintain an internal locus of control by making informed decisions about their end-of-life care. This preservation of agency ensures the individual remains a self-determined subject rather than a passive object of medical intervention.
- *Existential Integration*: Through life review, individuals cognitively integrate past experiences to achieve ego integrity, often transitioning towards gerotranscendence. This shift moves the focus from a materialistic, ego-driven existence to a cosmic, meaningful perspective that views death as a natural developmental transition.
- *Relational Security*: Relational security refers to the psychological assurance that an individual's social identity is acknowledged and valued, even as their physical



health declines.

- *The Mirroring*: Family members, caregivers, and close friends act as ‘social mirrors.’ By interacting with the dying person respectfully and attentively, they confirm that the individual’s identity remains intact despite illness or decline.
- *The Role of Generativity*: Relational security is strengthened when older adults observe that their values, skills, or life stories are being passed on to others. This experience, often called symbolic immortality, provides a sense that one’s life continues to have an impact beyond physical existence.
- *Preventing Social Death*: A significant psychological risk for terminally ill individuals is social death, which occurs when they are ignored, isolated, or treated as if they no longer exist. Relational security reduces this risk by ensuring ongoing, empathetic engagement, helping the person maintain a sense of belonging, dignity, and connection even in the final stages of life.

6.2.3. Stages of Grief: The Kübler-Ross Model

Grief is the psychological response to bereavement, typically characterised by feelings of intense sadness, distress, and preoccupation with the lost person or object. It is a universal human experience involving cognitive, emotional, and behavioural processes. Although grief is most commonly associated with bereavement, it also arises in response to other significant losses, such as terminal illnesses, decline in physical or cognitive functioning, or major life transitions.

One of the most influential frameworks for understanding emotional responses to impending death and loss is the stage model proposed by Elisabeth Kübler-Ross. Originally developed through her work with terminally ill patients, the model offers a descriptive account of the common emotional reactions individuals may experience when confronting death, whether their own or that of a significant other.

She identified five stages of grief: denial, anger, bargaining, depression, and acceptance. Each stage represents patterns of emotional response rather than fixed or universally experienced phases. These stages are generally understood as tendencies or themes in grieving, rather than as a rigid sequence that all individuals must pass through. They are considered neither linear nor exhaustive



Fig. 6.2.2.Kübler-Ross

i. Denial

Denial is often the initial psychological response to the awareness of impending loss or death. It functions as a temporary defence mechanism that allows individuals to absorb distressing information gradually. In this stage, the reality of death may be minimised, questioned, or emotionally distanced. From a developmental and clinical perspective, denial is not viewed as pathological; rather, it may serve an adaptive role by preventing emotional overwhelm during the early confrontation with loss.

ii. Anger

As the protective function of denial diminishes, individuals may experience anger. This anger can be directed toward the self, others, caregivers, fate, or abstract entities such as God or destiny. Psychologically, anger reflects the frustration and perceived injustice associated with loss and the loss of control. In later adulthood, anger may also be linked to unresolved life regrets or perceived failures, intersecting with Erikson's stage of ego integrity *versus* despair.

iii. Bargaining

Bargaining involves attempts to negotiate, often internally, to postpone or alter the outcome of loss. This stage may include promises, conditional thinking, or appeals to higher powers. From a cognitive perspective, bargaining reflects efforts to regain a sense of control in situations characterised by helplessness. Although bargaining is often subtle and private, it reveals the individual's struggle to reconcile hope with the inevitability of loss.

iv. Depression

Depression in the context of grief is characterised by sadness, withdrawal, and emotional pain related to the recognition of loss. Kübler-Ross distinguished this response from clinical depression, emphasising that grief-related depression is a natural and meaningful reaction to loss. This stage represents the deepening awareness of separation and the emotional consequences of impending or actual death. The depression experienced at this stage may be of two types. In *reactive depression*, the grief is based on events that have already occurred, such as the loss of dignity that may accompany medical procedures, job loss, or the realisation that their illness is fatal. In *preparatory depression*, grief is over future losses, such as the realisation that death will end their relationships with their loved ones.

v. Acceptance

Acceptance does not imply happiness or the absence of distress. Rather, it reflects a psychological state in which the individual acknowledges the reality of loss and begins to integrate it into their understanding of life. Acceptance is often associated with emotional calm, reduced struggle, and, in some cases, an increased focus on meaningful closure. In developmental terms, acceptance may align with ego integrity, where individuals achieve a sense of coherence and reconciliation with their life experiences.



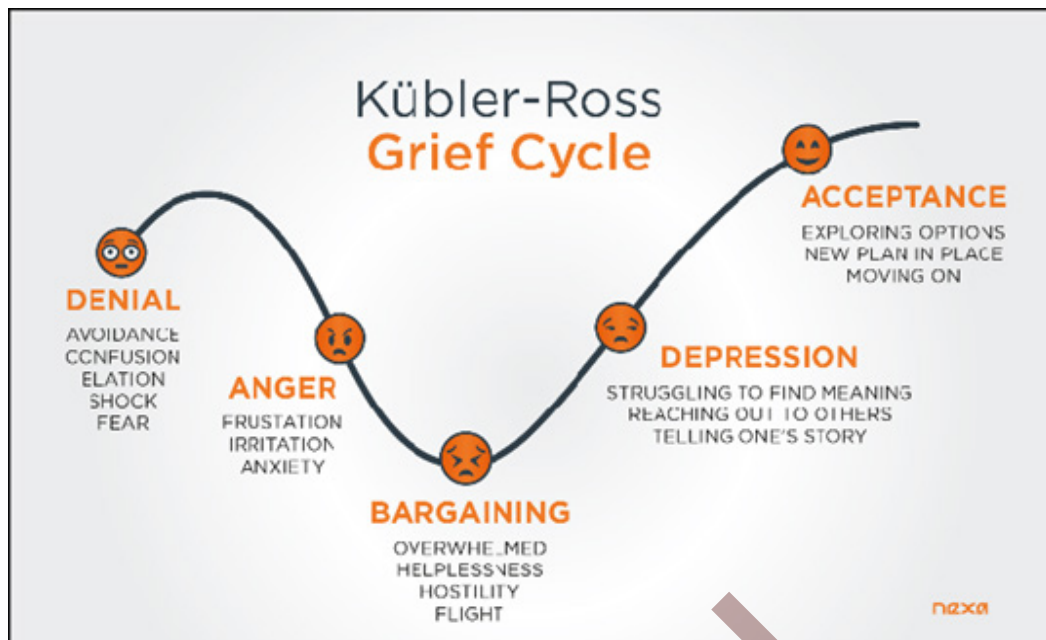


Fig. 6.2.3. Stages of Grief – Kübler-Ross Model

While the Kübler-Ross model has had a profound impact on how grief is understood and discussed, contemporary psychology recognises its limitations. Research has shown that grief does not follow a uniform or linear progression, and individuals may experience these responses in varying orders, simultaneously, or not at all. Cultural context, personality, type of loss, and social support significantly shape the grieving process.

6.2.4. Death and Bereavement Across the Lifespan

Understanding death is not an innate ability but a developmental milestone. As a person's cognitive structures evolve (moving from Piaget's sensorimotor to formal operational stages), so does their grasp of the *mature concept of death*. This evolving understanding shapes how individuals at different life stages perceive, interpret, and emotionally respond to experiences of death and loss. As a result, patterns of bereavement and coping differ across the lifespan, reflecting developmental, emotional, and social influences.

However, the key developmental question is: *When and how does a human mind grasp the finality of death?* According to the seminal work of Speece and Brent (1984), a 'mature' understanding of death is not a single realisation but a composite of four distinct cognitive sub-concepts.

1. Universality (All-Inclusiveness)

The component of universality, or all-inclusiveness, refers to the understanding that death is inevitable for all living things and constitutes an all-inclusive biological reality. In early childhood, specifically within Piaget's preoperational stage, children often exhibit a selective understanding of death. They may believe that while some people die, others, particularly those they are attached to or perceive as powerful, are exempt. For example, a five-year-old might logically accept that a dead bug they found in the garden is dead forever, yet simultaneously believe that their own parents or a favourite superhero are immortal.

2. Irreversibility (Finality)

Irreversibility is the cognitive realisation that once the physical body dies, the transition is permanent and cannot be undone. Children who have not yet reached this milestone often view death through the lens of ‘cartoon logic,’ in which a character is flattened or killed only to reappear in the next scene. For example, a young child may repeatedly ask when a deceased grandparent is *waking up*, treating death as a temporary state akin to sleep. Clinically, this is one of the most painful stages for caregivers to navigate, as the child may engage in persistent ‘searching’ behaviours. Mastering this concept allows the grieving process to move from the anticipation of return to the difficult task of psychological detachment.

3. Non-functionality (Cessation)

The concept of non-functionality holds that death is the total and permanent cessation of all internal and external functions, including breathing, heartbeat, thought, and sensory perception. This is frequently the most difficult component for children to master because it requires them to decouple life from existence. For example, a child might understand that a person is dead but still worry that the person is lonely, cold, or hungry while in a casket. This is a manifestation of animistic thinking, in which lifelike qualities are attributed to the deceased. Clinically, psychologists use biological explanations to help children move away from these frightening, anthropomorphic fantasies that can lead to acute anxiety.

4. Causality

Causality involves understanding the realistic physical or biological reasons why death occurs, such as internal disease, old age, or external trauma. The later addition of this fourth component was essential because it addresses the transition from magical thinking to biological reality. Without a grasp of causality, children (and sometimes even adolescents) are prone to causal confusion. For example, a child might believe that their evil thoughts or a specific tantrum they had three days prior caused a parent’s heart attack. This leads to profound survivor guilt. Providing a clear, age-appropriate biological explanation allows the child to separate their internal world from the external event, which is fundamental to healthy, non-pathological mourning.

While these four cognitive components provide the necessary mental architecture for understanding death, the emotional manifestation of grief is dictated by the specific developmental tasks and social milestones characteristic of each developmental stage. Death and bereavement are experienced differently at various stages of the lifespan, shaped by cognitive development, emotional maturity, social roles, and cultural expectations. A lifespan perspective recognises that the understanding of death, emotional responses to loss, and coping mechanisms evolve across development. Rather than being a single uniform experience, bereavement reflects age-related patterns of meaning-making and adjustment.

Childhood

In early childhood, the understanding of death is limited by cognitive development. Young children may not grasp the permanence or universality of death, often viewing it



as temporary or reversible. As a result, their expressions of grief may appear fragmented, inconsistent, or behaviourally expressed rather than verbally articulated. Emotional responses such as separation anxiety, regression, or changes in play are common indicators of bereavement during this period.

As children progress into middle childhood, cognitive maturation enables a more realistic understanding of death as irreversible and universal. Grief reactions become more recognisable and may include sadness, anger, guilt, or fear. At this stage, the availability of stable caregivers and clear communication plays crucial roles in helping children process loss and regain a sense of security.

Adolescence

Adolescence is marked by increased abstract thinking, identity formation, and heightened emotional intensity. Adolescents are capable of understanding the finality and existential implications of death, yet they may struggle to integrate loss into their still-developing sense of self. Bereavement during this period can evoke strong emotional reactions, including anger, confusion, and feelings of injustice. Peer relationships assume heightened importance in adolescence, and grief may be expressed privately or suppressed to avoid social isolation. Loss during this stage can influence risk-taking behaviour, identity exploration, and attitudes toward mortality. The tension between emotional vulnerability and the desire for autonomy often shapes adolescents' responses to bereavement.

Adulthood

In early and middle adulthood, experiences of death are frequently linked to the loss of parents, spouses, or peers, as well as to increased awareness of personal mortality. Cognitive and emotional capacities in adulthood enable more complex coping strategies, including meaning-making, emotion regulation, and reliance on social support. Bereavement in adulthood is often intertwined with role changes, such as becoming the head of a family or adapting to altered responsibilities. Grief responses during this stage may be moderated by accumulated life experience, yet they can also be intensified by concurrent stressors related to work, parenting, and caregiving.

Later Adulthood

Later adulthood is characterised by increased exposure to death, including the loss of spouses, siblings, and close friends. For many older adults, bereavement becomes a recurring experience, closely connected to life review and reflection. Emotional responses may include loneliness, sadness, and anxiety, but also acceptance and a reorganisation of priorities. From a developmental perspective, bereavement in later life intersects with Erikson's stage of ego integrity *versus* despair. Successful adjustment to loss may involve integrating grief into a coherent life narrative, maintaining meaningful relationships, and sustaining a sense of continuity despite loss. However, cumulative losses and reduced social networks can increase vulnerability to prolonged grief and depression.

Across all developmental periods of the lifespan, cultural beliefs, religious practices, and social norms significantly shape how death and bereavement are understood and expressed. Cultural frameworks influence mourning rituals, emotional expression, and expectations regarding adjustment. A lifespan approach to bereavement, therefore, requires sensitivity to both developmental stages and the sociocultural context.



Recap

- ◆ Meaning in life is the perception that one's existence is coherent and worthwhile.
- ◆ Purpose in later adulthood shifts from achievement to relationships and value transmission.
- ◆ Socioemotional selectivity theory explains the prioritisation of emotionally meaningful goals.
- ◆ Awareness of death acts as a catalyst for living authentically and seeking purpose.
- ◆ Cultural and spiritual frameworks help regulate anxiety and provide a sense of continuity.
- ◆ Death anxiety typically peaks in middle adulthood and diminishes in late adulthood.
- ◆ The four domains of death anxiety include fear of the process, prematurity, survivors, and the unknown.
- ◆ Terminal drop is a precipitous decline in cognitive ability 1–5 years before death.
- ◆ A 'good death' is characterised by autonomy, relational security, and existential integration.
- ◆ Relational security involves 'mirroring,' where others confirm the dying person's identity.
- ◆ The Kübler-Ross model identifies five stages: Denial, Anger, Bargaining, Depression, and Acceptance.
- ◆ A mature understanding of death requires mastering universality, irreversibility, non-functionality, and causality.
- ◆ Young children often use 'cartoon logic,' viewing death as a temporary or reversible state.
- ◆ Animistic thinking causes children to worry that the deceased might be 'cold' or 'lonely.'
- ◆ Adolescents understand the finality of death but may suppress grief to maintain autonomy.
- ◆ Bereavement responses vary across developmental stages.
- ◆ In later adulthood, bereavement is often cumulative and integrated into the life review process.



Objective Questions

1. What is the psychological term for a fear of the dying process or the unknown?
2. What is the term for the cognitive decline occurring shortly before death?
3. What occurs when a dying person is treated as if they are already gone?
4. What term describes the sense that one's values will live on after death?
5. Who developed the five-stage model of grief?
6. Which grief stage acts as a temporary defence mechanism to absorb news slowly?
7. Which stage of grief involves attempts to negotiate for more time?
8. What type of depression involves grieving for the loss of future relationships?
9. What type of depression is based on events that have already occurred?
10. What is the final stage in the Kübler-Ross model?
11. The understanding that all living things must die is called what?
12. The understanding that death cannot be undone is called what?
13. Realising that the heart and brain stop working refers to which sub-concept?
14. Understanding the biological reasons (like old age) for death is called what?
15. Attributing lifelike qualities to the deceased is known as what kind of thinking?
16. What is the structured reflection on past experiences used to reduce distress?
17. What is the psychological state of acknowledging and integrating the reality of loss?
18. Which psychosocial stage focuses on life acceptance?
19. Which outcome reflects failure to achieve ego integrity?

20. Which theory explains motivational shifts with limited time perception?
21. Which psychologist emphasised meaning-making amid suffering?
22. Which pattern describes death anxiety across age?
23. Which process integrates past experiences psychologically?
24. Which grief stage involves emotional withdrawal?
25. Which grief stage reflects conditional thinking?
26. Which stage reflects emotional reconciliation?
27. Which concept denotes death's inevitability?
28. Which concept reflects death's permanence?
29. Which concept denotes cessation of bodily functions?
30. Which concept explains realistic causes of death?

Answers

1. Death Anxiety
2. Terminal Drop (or Decline)
3. Social Death
4. Symbolic Immortality
5. Elisabeth Kübler-Ross
6. Denial
7. Bargaining
8. Preparatory Depression
9. Reactive Depression
10. Acceptance



11. Universality
12. Irreversibility
13. Non-functionality
14. Causality
15. Animistic Thinking
16. Life Review
17. Acceptance
18. Ego integrity
19. Despair
20. Socioemotional selectivity
21. Viktor Frankl
22. Curvilinear pattern
23. Life review
24. Depression
25. Bargaining
26. Acceptance
27. Universality
28. Irreversibility
29. Non-functionality
30. Causality

Assignments

1. Analyse the four domains of death anxiety and explain why this anxiety tends to decrease in late adulthood.

2. Explain the phenomenon of terminal drop and its psychological significance for the individual.
3. Compare and contrast the psychological challenges faced by survivors in sudden *versus* lingering dying trajectories.
4. Describe the components of a good death, focusing on the importance of autonomy and relational security.
5. Evaluate the Kübler-Ross model, providing a critique of its linearity and universality.
6. Explain the four cognitive sub-concepts (universality, irreversibility, non-functionality, causality) required for a mature understanding of death.

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4. Thornton, S. (2008). *Understanding Human Development: Biological, Social, and Psychological Processes from Conception to Adult Life*. Palgrave MacMillan, New York.

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1. Bryant, C.D. (2003). *Handbook of Death and Dying*. Sage Publications.
2. Frankl, V. (1985). *Man's Search for Meaning*. Pocket Books.
3. Hooyman, N.R. & Kramer, B.J. (2008). *Living through Loss: Interventions across the Lifespan*. Columbia University Press.
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5. Kübler-Ross, E. (1969). *On Death and Dying*. University of Michigan.



MODEL QUESTION PAPER SETS



SREENARAYANAGURU OPEN UNIVERSITY
MODEL QUESTION PAPER

QP CODE:.....

SET – A

Reg. No:.....

Name:.....

FOURTH SEMESTER BA PSYCHOLOGY

DISCIPLINE CORE

HUMAN DEVELOPMENT B23PY04DC

CBCS-UG Regulations 2021

2024 Admission Onwards

Time: 3 Hours

Max Marks: 70

SECTION-A

Objective Type Questions

Answer any ten. Each question carries one mark.

(10X1 = 10)

1. What term refers to the infant's ability to recognise themselves in a mirror, often demonstrated through the Rouge Test?
2. What term did Robert Butler coin to describe the systematic stereotyping and discrimination of people based on their age?
3. What is the name of the neuroendocrine feedback loop, involving the hypothalamus and pituitary gland, that regulates the onset of puberty?
4. In Jean Piaget's theory, what is the process of incorporating new information into existing schemas called?
5. Which prenatal diagnostic test involves withdrawing a sample of amniotic fluid to detect genetic abnormalities?
6. What term refers to the child's belief in their ability to successfully perform a motor task?
7. What type of research design studies the same group of individuals over an extended period of time?



8. In Jean Piagetian terms, what is the name of the advanced cognitive stage that emerges in adolescence, characterised by abstract and hypothetical thinking?
9. Which principle, proposed by Erik Erikson, suggests that human development follows a universal, predetermined order?
10. What is the earliest stage of prenatal development immediately following fertilisation called?
11. What term refers to the protective caps at the end of chromosomes that shorten each time a cell divides, eventually leading to cellular senescence?
12. In which developmental domain would a psychologist categorise the study of an individual's attachment styles and interpersonal relationships?
13. What term did Lev Vygotsky use to describe the gap between what a learner can do independently and what they can achieve with guidance?
14. What is the biological term for the universal, genetically programmed, and irreversible process of bodily decline that occurs in all members of a species?
15. Which specific form of intelligence, involving accumulated knowledge and verbal skills, tends to remain stable or even increase throughout middle adulthood?

SECTION-B

Very Short Answers

Answer any ten. Each question carries two marks.

(10X2=20)

16. What is meant by school readiness?
17. Distinguish between primary ageing and secondary ageing.
18. Why is attrition considered a significant disadvantage in longitudinal research?
19. What is meant by 'age of viability' in foetal development?
20. What is splitting according to object relations theory?
21. Define self-directed ageism and provide an example.
22. What is meant by propositional thinking?
23. Define conceptual development in childhood.

24. Distinguish between the quantitative nature of growth and the qualitative nature of development.
25. What is 'ageing in place' and why is it a key policy focus?
26. Define metacognition and provide an example of its use in an academic setting.
27. Mention any two characteristics of infancy.
28. Explain the difference between assimilation and accommodation in the theory of Jean Piaget.
29. What are the three components of moral development?
30. What do you understand by the longevity dividend perspective?

SECTION-C

Short Answers

Answer any five. Each question carries four marks.

(5X4=20)

31. Describe the structural changes that occur during the germinal period, from fertilisation to implantation.
32. Compare and contrast activity theory and disengagement theory regarding successful ageing.
33. Describe the three domains of human development and briefly explain their interrelationship.
34. Describe the key aspects of emotional development in adulthood.
35. Discuss any two policy issues associated with an ageing society.
36. Using the example of a 'bird schema,' explain how the process of equilibrium leads to accommodation in the theory of Jean Piaget.
37. Describe Erik Erikson's concept of a psychosocial crisis and its impact on personality development.
38. Discuss the importance of functional capacity and compensatory strategies in middle and late adulthood.
39. Describe any four features of emotional development in adolescence.
40. Discuss the four cognitive components involved in the mature understanding of death.



SECTION-D

Essay/Long Answers

Answer any two. Each question carries ten marks.

(2X10=20)

41. Analyse the cognitive shift from the formal operational stage described by Jean Piaget to post-formal thought in adulthood. Why is the application of pragmatism and relativism essential for navigating adult roles in work and relationships?
42. Discuss the physical and perceptual competencies of the newborn. How do neonatal reflexes and sensory capacities enable the infant to survive and interact with their new environment?
43. Evaluate the interconnectedness of biological, environmental, and psychological factors in shaping a child's physical and motor development. How do these factors contribute to the individual differences observed in a typical classroom setting?
44. Discuss the concept of adolescent egocentrism. How do the imaginary audience and the personal fable influence adolescent behaviour, risk-taking, and social interactions?



SREENARAYANAGURU OPEN UNIVERSITY

MODEL QUESTION PAPER

QP CODE:.....

SET – 0B

Reg. No:.....

Name:.....

BA PSYCHOLOGYFOURTH SEMESTER

DISCIPLINE CORE

HUMAN DEVELOPMENT B23PY04DC

CBCS-UG Regulations 2021

2024 Admission Onwards

Time: 3 Hours

Max Marks: 70

SECTION-A

Objective Type Questions

Answer any ten. Each question carries one mark

(10X1=10)

1. What term refers to the measurable physical increase in body size and structure from conception to maturity?
2. According to Lars Tornstam, what is the term for the gradual shift from a materialistic worldview to a more cosmic and transcendent perspective in later life?
3. What term refers to environmental agents that disrupt normal prenatal development?
4. What is the stage of cognitive development in the theory of Jean Piaget that typically begins during adolescence?
5. Which research design is most susceptible to cohort effects, where results may reflect generational differences rather than actual developmental ageing?
6. What term describes the process through which children internalise the norms, values, and behaviours of their society?
7. What is the term for the biological 'limit' that posits human cells can only



divide a finite number of times before they stop replicating?

8. Which theoretical perspective explains development in terms of inherited traits shaped through natural selection?
9. What is the term for the early form of speech, appearing between 12 and 18 months, that consists of single words often accompanied by gestures?
10. Which involuntary neonatal reflex is characterised by an infant throwing their arms outward and arching their back in response to a sudden noise?
11. In which of Jean Piaget's sensorimotor sub-stages does an infant first begin to repeat actions that produce a response in the external environment, such as shaking a rattle?
12. Which biological theory of ageing suggests that unstable molecules produced during metabolism damage cells and DNA over time?
13. According to Lawrence Kohlberg, what is the first stage of moral reasoning in which behaviour is guided by avoidance of punishment?
14. What is the term for the first occurrence of menstruation in females, serving as a primary indicator of sexual maturation?
15. In post-formal thought, what is the term for the ability to integrate opposing or contradictory ideas into a new, more complex synthesis?

SECTION-B

Very Short Answers

Answer any ten. Each question carries two marks.

(10X2=20)

16. What is meant by internalised ageism?
17. Differentiate between longitudinal research and cross-sectional research in developmental psychology.
18. What are self-conscious emotions, and when do they typically emerge?
19. Define infantilisation in the context of elder care.
20. What are the cephalocaudal and proximodistal trends in physical growth?
21. Define post-formal thought and list its three main characteristics.
22. Briefly describe the role of myelination in motor skill maturation.

23. Differentiate between primary and secondary sex characteristics.
24. Briefly explain the concept of internal objects in object relations theory.
25. What is meant by 'age of viability' in foetal development?
26. What is assimilation according to Jean Piaget?
27. What is a psychosocial moratorium in the context of identity formation?
28. Distinguish between synaptogenesis and synaptic pruning in brain development.
29. Describe the 'myth of senility'.
30. What is Apgar score, and why is it important in neonatal assessment?

SECTION-C

Short Answers

Answer any five. Each question carries four marks

(5X4=20)

31. Discuss the socio-emotional selectivity theory and how it explains social network changes in later life.
32. Explain the concept of object permanence and identify the sensorimotor sub-stage in which it typically emerges in the theory of Jean Piaget.
33. Analyse the interaction between secondary ageing and socioeconomic status (SES) in determining health outcomes.
34. Explain the stability versus change issue in human development and provide one argument used by proponents of each viewpoint.
35. Discuss why adolescents often experience heightened emotional intensity compared to children or adults.
36. Describe the psychosocial process of identity consolidation in early adulthood and how it differs from adolescent exploration.
37. Explain the crisis of ego integrity versus despair in the final psychosocial stage proposed by Erik Erikson.
38. Discuss how socioeconomic status (SES) acts as an environmental factor influencing physical and motor development.
39. Describe the theory of gerotranscendence and its three levels of development proposed by Lars Tornstam.
40. Explain why the embryonic period is considered a critical period of development.



SECTION-D

Essay/Long Answers

Answer any two. Each question carries ten marks

(2X10=20)

41. Analyse the role of the HPG axis and hormonal influences in pubertal growth. How do these biological changes interact with environmental factors like nutrition and stress to determine the timing and pace of development?
42. Evaluate the multidimensional factors that influence physical and motor development in adulthood. How do biological, lifestyle, and psychosocial factors interact to create the wide variability observed in functional health among older adults?
43. Analyse the multi-dimensional nature of school readiness. Discuss the five key domains a child must master to transition successfully into formal schooling and explain how biological and environmental factors influence these domains.
44. Compare and critically evaluate the developmental theories proposed by Sigmund Freud and Erik Erikson. How do they differ in their understanding of human development?

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**DON'T LET IT
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**SAY
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AND ALWAYS BE
HEALTHY**



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