SED – 11 HUMAN GROWTH AND DEVELOPMENT

COURSE INTRODUCTION

The course 'Human Growth and Development' consists of five units. They are:

Block 1: Approaches to Human Development

Block 2: Theoretical Approaches to Development

Block 3: The Early Years

Block 4: Early Adolescence

Block 5: Transition into Adulthood

Block 1 deals with the human development as a discipline from infancy to adulthood, concepts and principles of development, developing stages of human development, nature vs nurture, and domains of development.

Block 2 deals with the cognitive and social-cognitive theories, psycho-social theory, psycho-analytical theory, ecological theory, and holistic theory of development.

Block 3 deals with the prenatal development, birth and neonatal development, milestones and variations in development, environmental factors influencing early childhood development, and role of play in enhancing development.

Block 4 deals with emerging capabilities across domains of physical and social emotional, cognition, metacognition, creativity and ethics, issues related to puberty, gender and development, and influence of the environment (social, cultural, political) on the growing child.

Block 5 deals with psychological well-being, formation of identity and self-concept, emerging role and responsibilities of adulthood, life skills and independent living, and career choices.

This course aims at developing the understanding of basic concepts and principles of human growth and development, and their implications for the teacher. To principles of achieve this goal, you will study various aspects of human development. You will also study the factors influencing growth and development. The human developmental process and theories of development discussed in this course in detail. This will help you to find out the role and role and responsibilities of adulthood and help to develop basic life skills and independent living.

BLOCK 1 APPROACHES TO HUMAN DEVELOPMENT

Structure

INTRODUCTION

Human development characteristically passes through different stages. These stages are orderly and sequentially linked with the preceding and succeeding stages. Features unique to each stage change from stage to stage. They also vary from person to person thus making us unique in our own way. For some of us, these factors may move on smoothly while others may experience ups and downs. These factors and the way they are established in each person mark the foundation of the human personality. Let us familiarize ourselves with some important concepts which are used in analyzing the journey of life.

OBJECTIVES

After going through this block, you will be able to:

- distinguish pure psychology and applied psychology
- define developmental psychology
- differentiate growth and development
- explain principles of development
- comprehend the physical development in various stages
- realize the role of nature and nurture in human development

UNIT 1 HUMAN DEVELOPMENT AS A DISCIPLINE FROM INFANCY TO ADULTHOOD

OBJECTIVES

After going through this unit, you will be able to:

- Explain human development.
- Describe developmental changes from infancy to adulthood.

Psychology is divided into two broad categories, namely: Pure psychology and Applied Psychology. Pure Psychology provides the framework and theory of the subject. Its contents deal with the formulation of Psychological principles and theories. It also suggests various methods and techniques for the analysis, assessment, modification and improvement of behaviour. Applied Psychology applies the psychological rules, principles, theories and techniques with reference to real life situations.

Pure and applied Psychology has various branches. Various branches of pure and applied Psychology can be represented in the pictorial form as below:

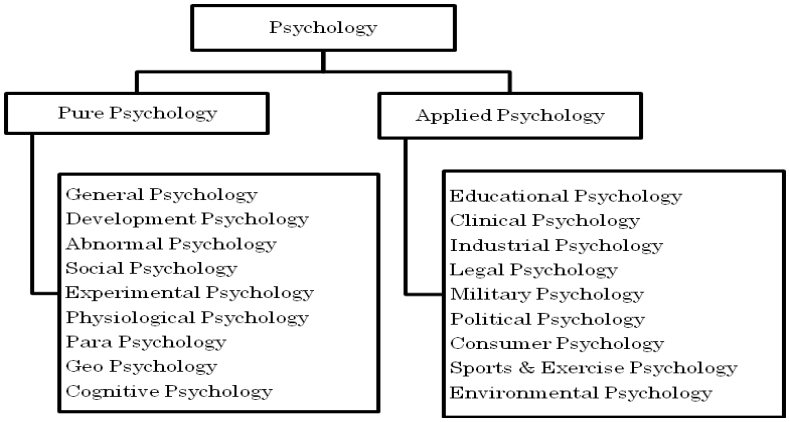


Fig. 1.1 Various Branches of Pure and Applied Psychology

Developmental psychology is the scientific study of age‐related changes throughout the human life span. A discipline of scientific inquiry, developmental psychology recognizes humans of all societies and cultures as beings who are “in process,” or constantly growing and changing. This discipline identifies the biological, psychological, and social aspects that interact to influence the growing human life‐span process. Developmental psychology is the scientific study of how and why human beings change over the course of their life. Originally concerned with infants and children, the field has expanded to include adolescence, adult development, aging and the entire lifespan. Developmental psychologists aim to explain how thinking, feeling and behaviour change throughout life. This field examines change across three major dimensions: physical development, cognitive development and socio-emotional development. Within these three dimensions are a broad range of topics including motor skills, executive functions, moral understanding, language acquisition, social change, personality, emotional development, self-concept and identity formation.

Developmental psychology is a scientific approach which aims to explain growth, change and consistency though the lifespan. Developmental psychology looks at how thinking, feeling and behavior change throughout a person’s life.

A significant proportion of theories within this discipline focus upon development during childhood, as this is the period during an individual's lifespan when the most changes occur.

Developmental psychologists study a wide range of theoretical areas, such as biological, social, emotion and cognitive processes. Empirical

research in this area tends to be dominated by psychologists from Western cultures such as North American and Europe, although during the 1980s Japanese researchers began making a valid contribution to the field.

The three goals of developmental psychology are to describe, explain and to optimize development. To describe development it is necessary to focus both on typical patterns of change (normative development) and on individual variations in patterns of change (i.e. idiographic development). Although there are typical pathways of development that most people will follow, no two persons are exactly alike.

Developmental psychologists must also seek to explain the changes they have observed in relation to normative processes and individual differences. Although, it is often easier to describe development than to explain how it occurs. Finally, developmental psychologists hope to optimise development and apply their theories to help people in practical situations (e.g. help parents develop secure attachments with their children).

Developmental psychology examines the influences of nature *and* nurture on the process of human development and processes of change in context and across time. Many researchers are interested in the interaction between personal characteristics. The individual's behavior and environmental factors, including social context and the built environment. Ongoing debates include biological essentialism vs. neuroplasticity and stages of development vs. dynamic systems of development.

Developmental psychology involves a range of fields, such as, educational psychology child psychopathology, forensic developmental psychology, child development, cognitive psychology, ecological psychology and cultural psychology. Influential developmental psychologists from the 20th century include Urie Bronfenbrenner, Erik Erikson, Sigmund Freud, Jean Piaget, Barbara Rogoff, Esther Thelen, and Lev Vygotsky.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

1. Name the two broad categories of psychology.

UNIT 2 CONCEPTS AND PRINCIPLES OF DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Describe the concept of development.
- Discuss the principles of human development.

Psychologists believe that education starts from mother's womb. We know mother is the first teacher of a child. Knowing the growth and development of the child makes one to bring the best in the child's life. Role of the teachers is also high. They should concentrate on the development of the child through the psychological approach. Child's physical growth, mental development, emotional stability and value based life are streamlined by the teachers when studying the growth and development of various periods of life.

Meaning of Growth and development

Growth refers to quantitative change leading to the goal of maturity. Crow and Crow defined that, "growth refers to structural and psychological changes while development refers to growth as well as changes in behaviour".

- Anderson states "Development does not consist merely of adding inches to one's height or improving one's ability. Instead development is a complex process of integrating many structures and functions."
- Hurlock defines, "Development Means a progressive series of changes that occur in an orderly predictable pattern as result of maturation and experience."

Differences between Growth and Development

The following table focuses the differences between the growth and development of an individual:

Table 1.2 Differences between the Growth and Development

Growth	Development
It refers to changes in the body.	It refers to overall changes resulting in improved function.
It refers to changes in quantitative aspects i.e., increase in size, height and weight.	It refers to changes in both quantitative and qualitative aspects.
It will not continue throughout life.	It is a continuous process.
It is narrow in meaning and one of the aspects of development.	It is a wider and comprehensive term related to both physical and psychological changes.
It may or may not bring development.	It is a possible without growth.
It is measurable because the quantitative changes are specific.	It is observable because the result of development is quite complex and difficult to measure.
It is physical and external in nature.	It is internal and can be physical, social, emotional and intellectual.

Principles of Growth and Development

There is a set of principles that characterizes the pattern and process of growth and development. These principles or characteristics describe typical development as a predictable and orderly process. We can predict how most children will develop and that they will develop at the same rate and at about the same time as other children. Although there are individual differences in children's personalities, activity levels, and timing of developmental milestones, such as ages and stages, the principles and characteristics of development are universal patterns.

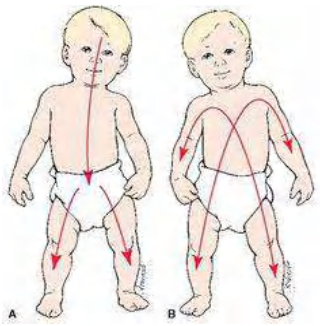
1. **Principle of continuity:** Development is a never ending process in one's life. It starts with conception and ends with death i.e. womb to tomb.
2. **Principle of lack of uniformity in the developmental rate:** Development though continuous, are not steady and uniform at all stages of life. It may be rapidly in the early stages of but slowdown in

later stages. In other hand, each child is different and the rates at which are individual child grows is different. Although the patterns and sequences for growth and development are usually the same for all children, the rates at which individual children reach developmental stages will be different.

3. **Principle of individual difference:** Everybody is unique and distinct creation. Therefore, development undergone in terms of the rate and outcome in various dimensions is quite unique and specific. So, each child grows and develops at his own unique rate.

   There is a range of ages for any developmental task to take place. This dismisses the notion of the "average child". Some children will walk at ten months while others walk a few months older at eighteen months of age. Some children are more active while others are more passive. This does not mean that the passive child will be less intelligent as an adult. There is no validity to comparing one child's progress with or against another child. Rates of development also are not uniform within an individual child. For example, a child's intellectual development may progress faster than his emotional or social development.

4. **Principle of uniformity of pattern:** According to this principle, every species follows the standard pattern (directions and sequence) of development which is uniform over the world and there is no difference among them. In humans, physical development are categorical as two standard pattern of development: (A) cephalocaudal and (B) proximodistal.



According to principle of cephalocaudal development, the child gains control of the head first, then the arms and then the legs. Infants develop control of the head and face movements within the first two months after birth. In the next few months, they are able to lift themselves up by using their arms. By 6 to 12 months of age, infants start to gain leg control and may be able to crawl, stand, or walk. Coordination of arms always precedes coordination of legs.

Principle of proximodistal development means that the spinal cord develops before outer parts of the body. The child's arms develop before the hands and the hands and feet develop before the fingers and toes. Finger and toe muscles (used in fine motor dexterity) are the last to develop in physical development. Similarly the other

dimensions of development seem to follow a definite sequence in all children.

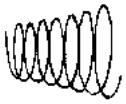
5. **Principle of proceeding general to specific responses:** Growth and development proceeds from general to specific. For e.g. the child learns general concept first, then makes depth or specific studies. First the child learns to control his full hand, later he tries to control on the movement of fingers on his hands.

6. **Principle of integration:** Growth and development proceeds from general to specific one. It does not mean that only the specific responses are aimed for the ultimate results of one's development. Rather, it is sort of integration that is ultimately desired. According to this principle, a child first learns how to move the whole limb, then how to move its various parts and at last he learns to integrate various parts of the limb. So, in development there is a movement from the whole to parts and from the parts to the whole and in this way it is integration of the whole and its parts.

7. **Principle of interrelation:** The various dimensions (physical, mental, emotional, social, moral, and spiritual) of one's growth and development are interrelated and interdependent. What is achieved or not achieved in one or the other dimension in the course of gradual and continuous process of development that surely affects the other dimensions development. For e.g. A healthy body tends to develop a healthy mind and emotionally stable and socially conscience personality.

8. **Principle of predictability:** According to this principle, growth and development are predictable. Rate of growth and development of each child gives scope to predict the future development, either physically, mentally, emotionally or society.

9. **Principle of spiral versus linear advancement:** The child does not straightly proceed on the path of development with a constant or steady pace at any stage. Actually he makes advancement during particular period but takes rest in the next following period to consolidate his development. In advancing further he turns back and then moves forward again like a spiral.



10. **Principle of interaction:** Growth and development are joint product of both heredity and environment. Child's heredity gives the starting point and from growth and development takes place due to the

interaction of child (heredity) with the environment. Therefore, at any stage, the individual behaviour or personality makeup is nothing but the end product of constant interaction between heredity and environment.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

2. Define the meaning of growth and development.

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3. Explain the principle of predictability?

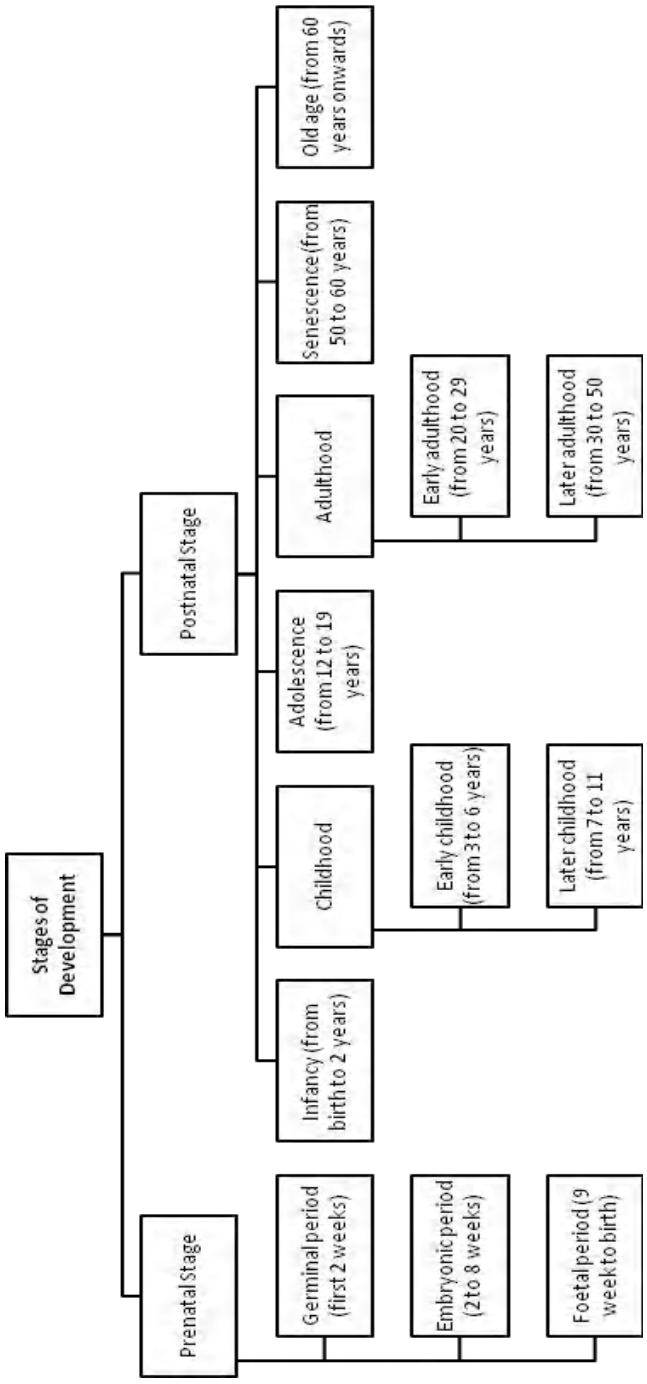
UNIT 3 DEVELOPING STAGES OF HUMAN DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Comprehend the changes in developing stages of human development.

Based on certain development characteristics psychologists have classified human life span into the following developmental stages:



I. Prenatal Stage (From conception to birth)
- Germinal period (first 2 weeks)
- Embryonic period (2 to 8 weeks)
- Foetal period (9 week to birth)

II. Postnatal Stages

1. Infancy — from birth to 2 years
2. Childhood

	(i) Early childhood	from 3 to 6 years
	(ii) Later childhood	from 7 to 11 years
3.	Adolescence	from 12 to 19 years
4.	Adulthood	
	(i) Early adulthood	from 20 to 29 years
	(ii) Later adulthood	from 30 to 50 years
5.	Senescence	from 50 to 60 years
6.	Old age	from 60 years onwards

3.1 PRENATAL STAGE

Prenatal development refers to the process in which a baby develops from a single cell after conception into an embryo and later a fetus. The average length of time for complete prenatal development is 38 weeks from the date of conception. During this time, a single-celled zygote develops in a series of into a full-term baby after a series of stages. The three primary stages of prenatal development are the germinal stage the embryonic stage, and the fetal stage.

3.1.1 Germinal Period

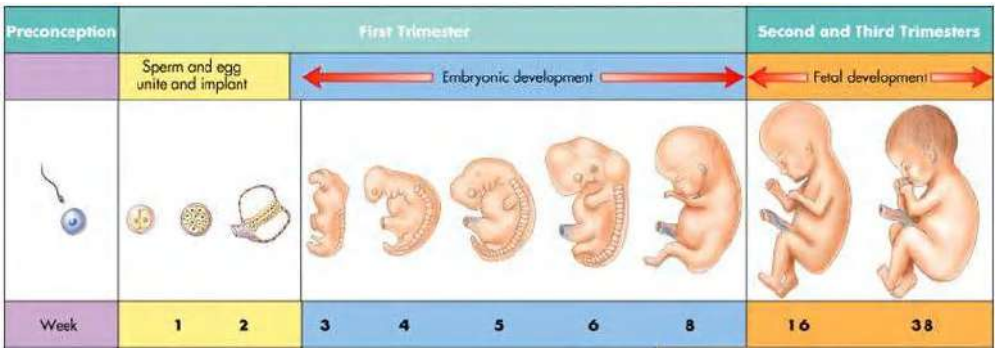
Conception occurs when the female egg (ovum) is fertilized by a male sperm. Under normal circumstances, one egg is released approximately once a month from a woman's ovary during a process called ovulation. The egg makes its way into a fallopian tube, a structure that guides the egg away from the ovary toward the uterus. For fertilization to occur, sperm ejaculated during sexual intercourse (or introduced during artificial insemination) in a substance called semen must have made their way from the vagina into the uterus and subsequently into the fallopian tube where the ovum has been released. This process can take up to ten hours after ejaculation. For fertilization to occur, a sperm must penetrate the tough outer membrane of the egg called the zona pellucida. When one sperm successfully binds with the zona pellucida, a series of chemical reactions occurs to allow only that particular sperm to penetrate. Fertilization occurs when the sperm successfully enters the ovum's membrane. The genetic material of the sperm and egg then combine to form a single cell called a zygote and the germinal stage of prenatal development commences.

The zygote soon begins to divide rapidly in a process called cleavage, first into two identical cells called blastomeres, which further divide to four cells, then into eight, and so on. The group of diving cells begins to move along the fallopian tube toward the uterus. About sixty hours after fertilization, approximately sixteen cells have formed to what is called a morula, still enclosed by the zona pellucid. Three days after fertilization, the morula enters the uterus. As cell division continues, a fluid-filled cavity called a blastocoele forms in the center of the group of cells, with the outer shell of cells called trophoblasts. An inner mass of cells called embryoblasts. The zona pellucida disappears and the morula becomes a blastocyst. At this stage the blastocyst consists of 200 to 300 cells and is ready for implantation.

Implantation is the process in which the blastocyst implants into the uterine wall, occurs approximately six days after conception. Hormones secreted from the mother's ovaries and a chemical secreted by the trophoblasts begin to prepare the uterine wall. The blastocyst first adheres to the wall then moves into the uterine tissue. Implantation marks the end of the germinal stage and the beginning of the embryonic stage.

3.1.2 Embryonic Stage

The embryonic stage begins after implantation and lasts until eight weeks after conception. Soon after implantation, the cells continue to rapidly divide and clusters of cells begin to take on different functions called differentiation. A process called gastrulation leads to the formation of three distinct layers called germ layers: the ectoderm (outer layer), the mesoderm (middle layer), and the endoderm (inner layer). As the embryo develops, each germ layer differentiates into different tissues and structures. For example, the ectoderm eventually forms skin, nails, hair, brain, nervous tissue and cells, nose, sinuses, mouth, anus, tooth enamel, and other tissues. The mesoderm develops into muscles, bones, heart tissue, lungs, reproductive organs, lymphatic tissue, and other tissues. The endoderm forms the lining of lungs, bladder, digestive tract, tongue, tonsils, and other organs.



The process of differentiation takes place over a period of weeks with different structures forming simultaneously. Some of the major events that occur during the embryonic stage are as follows:

- Week 3: Beginning of the development of the brain, heart, blood cells, circulatory system, spinal cord, and digestive system.
- Week 4: Beginning of the development of bones, facial structures, and limbs (presence of arm and leg buds); continuing development of the heart (which begins to beat), brain, and nervous tissue.
- Week 5: Beginning of the development of eyes, nose, kidneys, lungs; continuing development of the heart (formation of valves), brain, nervous tissue, and digestive tract.
- Week 6: Beginning of the development of hands, feet, and digits; continuing development of brain, heart, and circulation system.
- Week 7: Beginning of the development of hair follicles, nipples, eyelids, and sex organs (testes or ovaries); first formation of urine in the kidneys and first evidence of brain waves.
- Week 8: Facial features more distinct, internal organs well developed, the brain can signal for muscles to move, heart development ends, external sex organs begin to form.

By the end of the embryonic stage, all essential external and internal structures have been formed. The embryo is now referred to as a fetus.

3.1.3 Fetal Stage

Prenatal development is most dramatic during the fetal stage. When an embryo becomes a fetus at eight weeks, it is approximately 3 centimeters (1.2 inches) in length from crown to rump and weighs about 3 grams (0.1 ounce). By the time the fetus is considered full-term at 38 weeks gestation, he or she may be 50 centimeters (20 inches) or 3.3

kilograms (7.3 pounds). Although all of the organ systems were formed during embryonic development, they continue to develop and grow during the fetal stage. Examples of some of the major features of fetal development by week are as follows:

- Weeks 9–12: The fetus reaches approximately 8 cm. (3.2 in.) in length. The head is approximately half the size of the fetus. External features such as the face, neck, eyelids, limbs, digits, and genitals are well formed. The beginnings of teeth appear, and red blood cells begin to be produced in the liver. The fetus is able to make a fist.
- Weeks 13–15: The fetus reaches approximately 15 cm. (6 in.) in length. Fine hair called lanugo first develops on the head. Structures such as the lungs, sweat glands, muscles, and bones continue to develop. The fetus is able to swallow and make sucking motions.
- Weeks 16–20: The fetus reaches approximately 20 cm. (8 in.) in length. Lanugo begins to cover all skin surfaces, and fat begins to develop under the skin. Features such as finger and toenails, eyebrows, and eyelashes appear. The fetus becomes more active, and the mother can sometimes begin to feel fetal movements at this stage.
- Weeks 21–24: The fetus reaches approximately 28.5 cm. (11.2 in.) in length and weighs approximately 0.7 kg (1 lb. 10 oz.). Hair grows longer on the head, and the eyebrows and eye lashes finish forming. The lungs continue to develop with the formation of air sac (alveoli); the eyes finish developing. A startle reflex develops at this time.
- Weeks 25–28: The fetus reaches approximately 38 cm. (15 in.) in length and weighs approximately 1.2 kg (2 lb. 11 oz.). The next few weeks mark a period of rapid brain and nervous system development. The fetus gains greater control over movements such as opening and closing eyelids and certain body functions. The lungs have developed sufficiently that air breathing is possible.
- Weeks 29–32: The fetus reaches approximately 38–43 cm. (15–17 in.) in length and weighs approximately 2 kg (4 lb. 6 oz.). Fat deposits become more pronounced under the skin. The lungs remain immature but breathing movements begin. The fetus's bones are developed but not yet hardened.

- Weeks 33–36: The fetus reaches approximately 41–48 cm. (16–19 in.) in length and weighs 2.6–3.0 kg (5 lb. 12 oz. to 6 lb. 12 oz.). Body fat continues to increase, lanugo begins to disappear, and fingernails are fully grown. The fetus has gained a high degree of control over body functions.
- Weeks 36–38: The fetus reaches 48–53 cm. (19–21 in.) in length and is considered to be full-term baby by the end of this period. Lanugo has mostly disappeared and is replaced with thicker hair on the head. Fingernails have grown past the tips of the fingers. In a healthy fetus, all organ systems are functioning.

3.2 POSTNATAL STAGES

3.2.1 Infancy

Infants (birth to age 1) and toddlers (ages 1 to 2) grow quickly. Bodily changes are rapid and profound. Physical development refers to biological changes that children undergo as they age. Important aspects that determine the progress of physical development in infancy and toddlerhood include physical and brain changes. Development of reflexes, motor skills, sensations, perceptions, and learning skills; and health issues can be noticed.

The first 4 weeks of life are termed the neonatal period. Most babies weigh between 5 1/2 and 10 pounds, and are between 18 and 22 inches long. Male babies are generally slightly heavier and longer than female babies. Neonates born weighing less than 5 1/2 pounds are of low birthweight. Infants who arrive before

their due date are preterm or premature. These babies may or may not have a low birthweight. Babies who arrive on or shortly after their due date are full-term. Infants who arrive 2 or more weeks after their due date are postmature. Both premature and postmature babies are at higher risk of complications such as sickness, brain damage, or death, than the full-term babies.

Physical growth is especially rapid during the first 2 years. An infant's birthweight generally doubles by 6 months and triples by the infant's first birthday. Similarly, a baby grows between 10 and 12 inches in length (or

height), and the baby's proportions change during the first 2 years. The size of an infant's head decreases in proportion from 1/3 of the entire body at birth, to 1/4 at age 2, to 1/8 by adulthood.

Fetal and neonatal brain developments are also rapid. The lower, or subcortical, areas of the brain (responsible for basic life functions, like breathing) develop first, followed by the higher areas, or corticalareas (responsible for thinking and planning). Most brain changes occur prenatally and soon after birth. At birth, the neonate's brain weighs only 25 percent of that of an adult brain. By the end of the second year, the brain weighs about 80 percent. By puberty, it weighs nearly 100 percent of that of an adult brain.

Reflexes and motor skills

As infants cannot endure on their own, newborns have specific built-in or prewired abilities for survival and adaptive purposes. Reflexes are automatic reactions to stimulation that enable infants to respond to the environment before any learning has taken place. For instance, babies automatically suck when presented with a nipple, turn their heads when a parent speaks, grasp at a finger that is pressed into their hand, and startle when exposed to loud noises. Some reflexes, such as blinking, are permanent. Others, such as grasping, disappear after several months and eventually become voluntary responses. Common infant motor reflexes appear in Table 1.

TABLE 1 Common Infant Motor Reflexes

Reflex	*Stimulus/Action*
Blinking	In response to a puff of air, the infant closes both eyes.
Babinski	In response to stroking the side of its foot, the infant twists its foot inward and fans out its toes.
Grasping	In response to an object pressed against its palm, the infant attempts to grasp the object.
Moro	In response to a shock or loud noise, the infant arches its back and throws its arms outward.
Rooting	In response to stroking its cheek, the infant turns its head toward the touch and attempts to suck.
Stepping	In response to holding the infant so that its feet barely touch a surface, the infant "walks."
Sucking	In response to inserting a finger or nipple into its mouth, the infant begins rhythmically sucking.
Babkin	In response to stroking its forehead, the infant turns its head and opens its mouth.
Plantar	In response to touching the ball of the foot, the infant curls its toes under.

Motor skills, or behavioral abilities, develop in conjunction with physical growth. In other words, infants must learn to engage in motor activities within the context of their changing bodies. At about 1 month, infants may lift their chins while lying flat on their stomachs. Within another month, infants may raise their chests from the same position. By the fourth month, infants may grasp rattles, as well as sit with support. By the fifth month, infants may roll over, and by the eighth month, infants may be able to sit without assistance. At about 10 months, toddlers may stand while holding onto an object for support. At about 14 months, toddlers may stand alone and perhaps even walk. Of course, these ages for each motor-skill milestone are averages. The rates of physical and motor developments differ among children depending on a variety of factors, including heredity, the amount of activity the child participates in and the amount of attention the child receives.

Motor development follows cephalocaudal (center and upper body) and proximodistal (extremities and lower body) patterns, so that motor skills become refined first from the center and upper body and later from the extremities and lower body. For example, swallowing is refined before walking and arm movements are refined before hand movements.

Sensation and perception

Normal infants are capable of sensation, or the ability to respond to sensory information in the external world. These infants are born with functioning sensory organs, specialized structures of the body containing sensory receptors, which receive stimuli from the environment. Sensory receptors convert environmental energy into nervous system signals that the brain can understand and interpret. For example, the sensory receptors can convert light waves into visual images. The human senses include seeing, hearing, smelling, touching, and tasting.

Newborns are very nearsighted, but visual acuity, or ability, develops quickly. Although infant vision is not as good as adult vision, babies may respond visually to their surroundings from birth. Infants are particularly attracted to objects of light-and-dark contrasts, such as the human face. Depth perception also comes within a few months. Newborns may also respond to tastes, smells, and sounds, especially the sound of the human voice. In fact, newborns may almost immediately distinguish between the primary caregiver and others on the basis of sight, sound, and smell. Infant sensory abilities improve considerably during the first year.

Perception is the psychological process by which the human brain processes the sensory data collected by the sensory organs. Visually, infants are aware of depth (the relationship between foreground and background) and size and shape constancy (the consistent size and shape of objects). This latter ability is necessary for infants to learn about events and objects.

Learning

Learning is the process that results in relatively permanent change in behavior based on experience. Infants learn in a variety of ways.

In classical conditioning (Pavlovian), learning occurs by association when a stimulus that evokes a certain response becomes associated with a different stimulus that originally did not cause that response. After the two stimuli associate in the subject's brain, the new stimulus then elicits the same response as the original. For instance, in psychologist John B. Watson's experiment with 11-month old "Little Albert" in the 1920s, Watson classically conditioned Albert to fear a small white rat by pairing *the sight of* the rat with a loud, frightening noise.

The once-neutral white rat then became a feared stimulus through associative learning. Babies younger than age 3 months generally do not learn well through classical conditioning.

In operant conditioning (Skinnerian), learning occurs through the application of rewards and/or punishments. Reinforcements increase behaviors, while punishments decrease behaviors. Positive reinforcements are pleasant stimuli that are added to increase behavior; negative reinforcements are unpleasant stimuli that are removed to increase behavior. Because reinforcements always increase behavior, negative reinforcement is not the same as punishment. For example, a parent who spanks a child to make him stop misbehaving is using punishment, while a parent who takes away a child's privileges to make him study harder is using negative reinforcement. Shaping is the gradual application of operant conditioning. For example, an infant who learns that smiling elicits positive parental attention will smile at its parents more. Babies generally respond well to operant conditioning.

In observational learning, learning is achieved by observing and imitating others, as in the case of an infant who learns to clap by watching and imitating an older sibling. This form of learning is perhaps the fastest and most natural means by which infants and toddlers acquire new skills.

Health

Normal functioning of the newborn's various body systems is vital to its short-term and long-term health. Less than 1 percent of babies experience birth trauma, or injury incurred during birth. Longitudinal studies have shown that birth trauma, low birth weight, and early sickness can affect later physical and mental health but usually only if

these children grow up in impoverished environments. Most babies tend to be rather hardy and are able to compensate for less-than-ideal situations early in life.Nevertheless, some children are born with or are exposed to conditions that pose greater challenges. For example, phenylketonuria (PKU) is an inherited metabolic disorder in which a child lacks phenylalanine hydroxylase. The enzyme necessary to eliminate excess phynelalanine, an essential amino acid, from the body. Failure to feed a special diet to a child with PKU in the first 3 to 6 weeks of life will result in mental retardation. Currently, all 50 states of USA require PKU screening for newborns.

Poor nutrition, hygiene, and medical care also expose a child to unnecessary health risks. Parents need to ensure that their infant eats well, is clean, and receives adequate medical attention. For instance, proper immunization is essential in preventing such contagious diseases as diptheria, measles, mumps, Rubella, and polio. A licensed health-care specialist can provide parents with charts detailing recommended childhood immunizations.

Infant mortality refers to the percentage of babies that die within the first year of life. In the United States today, about 9 babies out of every 1,000 live births die within the first year. This is a significantly smaller percentage than was reported only 50 years ago. This decrease in infant mortality is due to improvements in prenatal care and medicine in general. However, minority infants tend to be at a higher risk of dying, as they are low birthweight, premature, and postmature babies. The leading causes of infant death are congenital birth defects, such as heart valve problems or pregnancy complications, and sudden infant death syndrome (SIDS).

SIDS is the unexpected and unexplained death of an apparently healthy infant. Postmortem autopsies of the SIDS infant usually provide no clues as to the cause of death. As far as authorities know, choking, vomiting, or suffocating does not cause SIDS. Two suspected causes include infant brain dysfunction and parental smoking, both prenatally and postnatally. In the United States, between 1 and 2 out of every 1,000 infants under age 1 die of SIDS each year.

3.2.2 Childhood

Early childhood

Physical Development

Ages 3 to 6 are the **early childhood** years, or preschool years. Like infants and toddlers, preschoolers grow quickly—both physically and cognitively. A short chubby toddler who can barely talk suddenly becomes a taller, leaner child who talks incessantly. Especially evident during early childhood is the fact that development is truly **integrated.** The biological, psychological, and social changes occurring at this time (as well as throughout the rest of the life span) are interrelated.

Although physical development in preschoolers is dramatic, the development is slower and more stable than during infancy. Some important influences on physical development during the preschool period include changes in the child's brain, gross and fine motor skills, and health develops.

Physical changes

Children begin to lose their baby fat, or chubbiness, around age 3. Toddlers soon acquire the leaner, more athletic look associated with childhood. The child's trunk and limbs grow longer, and the abdominal muscles form, tightening the appearance of the stomach. Even at this early stage of life, boys tend to have more muscle mass than girls. The preschoolers' physical proportions also continue to change, with their heads still being disproportionately large, but less so than in toddlerhood.

Three- year-old preschoolers may grow to be about 38 inches tall and weigh about 32 pounds. For the next 3 years, healthy preschoolers grow an additional 2 to 3 inches and gain from 4 to 6 pounds per year. By age 6, children reach a height of about 46 inches and weigh about 46 pounds. Of course, these figures are averages and differ from child to child, depending on socioeconomic status, nourishment, health, and heredity factors.

Brain development

Brain and nervous system developments during early childhood continues to be dramatic. The better developed the brain and nervous

systems are, the more complex behavioral and cognitive abilities children are capable of.

The brain is comprised of two halves, the right and left **cerebral hemispheres. Lateralization** refers to the localization of assorted functions, competencies, and skills in either or both hemispheres. Specifically, language, writing, logic, and mathematical skills seem to be located in the left hemisphere, while creativity, fantasy, artistic, and musical skills seem to be located in the right hemisphere. Although the hemispheres may have separate functions, these brain masses always coordinate their functions and work together.

The two cerebral hemispheres develop at different rates, with the left hemisphere developing more fully in early childhood (ages 2 to 6), and the right hemisphere developing more fully in middle childhood (ages 7 to 11). The left hemisphere predominates earlier and longer, which may explain why children acquire language so early and quickly.

Another aspect of brain development is **handedness,** or preference for using one hand over the other. Handedness appears to be strongly established by middle childhood. About 90 percent of the general population is right-handed, while the rest of the population is left-handed and/or ambidextrous. A person is ambidextrous if he or she shows no preference for one hand over the other. Typically, right-handedness is associated with left-cerebral dominance and left-handedness with right-cerebral dominances.

The nervous system too undergoes changes in early childhood. The majority of a child's **neurons,** or cells that make up nerves, form prenatally. However, the **glial cells,** (nervous system support cells surrounding neurons) that nourish, insulate, and remove waste from the neurons without actually transmitting information themselves, develop most rapidly during infancy, toddlerhood, and early childhood. The **myelin sheaths** that surround, insulate, and increase the efficiency of neurons (by speeding up the action potential along the axon) also form rapidly during the first few years of life. The postnatal developments of glial cells and myelin sheaths help to explain why older children may perform behaviors that younger children are not capable of.

Motor skills

Motor skills are physical abilities or capacities. **Gross motor skills,** which include running, jumping, hopping, turning, skipping, throwing, balancing, and dancing, involve the use of large bodily movements. **Fine motor skills,** which include drawing, writing, and tying shoelaces, involve the use of small bodily movements. Both gross and fine motor skills develop and are refined during early childhood. However, fine motor skills develop more slowly in preschoolers. If you compare the running abilities of a 2-years old. A 6-year old, for example, you may notice the limited running skills of the 2-year-old. But the differences are even more striking when comparing a 2 years –old and 6-year-old and a 6-year-old has abilities of a 2-year-old and a 6-year old, for example, you may notice the difficulty grasping the concept before ever attempting or completing the task.

Albert Bandura's theory of **observational learning** is applicable to preschoolers' learning gross and fine motor skills. Bandura states that once children are biologically capable of learning certain behaviors, children must do the following in order to develop new skills:

1. Observe the behavior in others.
2. Form a mental image of the behavior.
3. Imitate the behavior.
4. Practice the behavior.
5. Be motivated to repeat the behavior.

In other words, children must be ready, have adequate opportunities, and be interested in developing motor skills to become competent at those skills.

Health

Preschoolers are generally quite healthy, but may develop medical problems. Typical minor illnesses, which usually last no more than 14 days that include colds, coughs, and stomachaches. Respiratory ailments are the most common illnesses among children at this age because preschoolers' lungs have not yet fully developed. Most childhood illnesses usually do not require a physician's or nurse's attention. Additionally, minor illnesses may help children to learn coping skills, particularly how to deal with physical discomfort and distress.

Minor illnesses may also help children learn **empathy,** or how to understand someone else's discomfort and distress.

In contrast, major illnesses of early childhood, which are severe and last longer than 14 days, include influenza, pneumonia, cancer, and human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS). AIDS is among the top 10 causes of death for small children, and to date, more than 25,000 children in the United States have died from AIDS and related complications. Besides physical problems, children suffering from term illnesses have significant psychological hurdles to long overcome, including developmental delays, anxiety, and pain. Moreover, children afflicted by AIDS may also have parents with AIDS and must learn to cope with household stress, depression, and the potential loss of their caregivers.

Certain children experience more illnesses than their peers. Poverty, family stress, being in daycare, or being from a large family (more family members increase the risk that someone may get sick and pass along the illness to other family members) is correlated with increased risk of illness in the preschooler age group.

The majority of deaths during early childhood are due to accidental injuries rather than illnesses. The most common source of deadly accidents for preschoolers is the automobile. Other causes of childhood death include drowning, suffocating, being burned, being poisoned, and falling from heights. Young children's sense of adventure often outweighs their understanding of the dangers inherent in various activities and situations. Therefore, adequate adult supervision is necessary at all times whether at home, in daycare, or on the playground.

Cognitive Development

Preschoolers provide remarkable examples of how children play an active role in their own cognitive development, especially in their attempts to understand, explain, organize, manipulate, construct, and predict. Young children also see patterns in objects and events of the world and then attempt to organize those patterns to explain the world.

At the same time, preschoolers have cognitive limitations. Children have trouble controlling their own attention and memory functions, confuse

superficial appearances with reality, and focus on a single aspect of an experience at a time. Across cultures, young children tend to make these same kinds of immature cognitive errors.

Piaget referred to the cognitive development occurring between ages 2 and 7 as the **preoperational stage.** In this stage, children increase their use of language and other symbols, their imitation of adult behaviors, and their play. Young children develop a fascination with words both good and bad language. Children also play games of make-believe, using on empty box as a car, playing family with siblings and nurturing imaginary friendships.

Piaget also described the preoperational stage in terms of what children cannot do. Piaget used the term **operational** to refer to reversible abilities that children had not yet developed. By reversible, Piaget referred to mental or physical actions that can go back and forth—meaning that they can occur in more than one way, or direction. Adding (3+3=6) and subtracting (6-3=3) are examples of reversible actions. Children at this stage, according to Piaget, make use of magical thinking based on their own sensory and perceptual abilities and are easily misled. Children engage in magical thinking, for instance, while speaking with their parents on the telephone and then asking for a gift, expecting it to arrive via the telephone.

Piaget believed that preschoolers' cognitive abilities are limited by **egocentrism**, the inability to distinguish between their own point of view and the point of view of others. The capacity to be egocentric is apparent at all stages of cognitive development, but egocentricity is particularly evident during the preschool years. Young children eventually overcome this early form of egocentrism when learning that others have differing views, feelings, and desires. Then children may interpret others' motives and use those interpretations to communicate mutually and therefore more effectively with others. Preschoolers eventually learn to adjust their vocal pitches, tones, and speeds to match those of the listener. Because mutual communication requires effort and preschoolers are still egocentric, children may lapse into egocentric (nonmutual) speech during times of frustration. In other words, children (and adults) may regress to earlier behavioral patterns when their cognitive resources are stressed and overwhelmed.

Piaget indicated that young children have not mastered **classification,** or the ability to group according to features. Neither have they mastered **serial ordering,** or the ability to group according to logical progression. While possibly inherent in young children, these abilities are not fully realized until later.

Piaget also believed that young children cannot comprehend **conservation,** or the concept that physical properties remain constant even as appearance and form change. Young children have trouble understanding that the same amount of liquid poured into containers of different shapes remains the same. A preoperational child will tell you that a handful of pennies is more money than a single five-dollar bill. According to Piaget, when children develop the cognitive capacity to conserve (around age 7), children move into the next stage of development, concrete operations.

Current research implies that children are not as suggestible, operational, magical, or egocentric as Piaget surmised. In studying children's use of symbols and representational thinking, for example, researcher Renee Baillargeon found that preschoolers as young as 2 1/2 are able to employ reversible mental thinking. Baillargeon's research involved the following experiment: Two objects—a large red pillow and a miniature red pillow—are hidden in a large room and a miniature replica of the room, respectively; shown where the miniature pillow is hiding in the miniature room, a child locates the corresponding large pillow in the large room. Baillargeon suggested that such abilities are indicative of symbolic thought, in which objects represent not only themselves but also other objects as well.

In contrast to Piaget's theories of childhood egocentrism, similar studies indicate that children can and do relate to the frame of reference of others. Two- and three-years-olds, for instance, have been shown to modify their speech in an effort to communicate more clearly with younger children. Researcher John Flavell suggested that preschoolers progress through two stages of **empathy** or sharing perspectives. At the first level, around ages 2 through 3, the child understand that others have their own experiences. At the second level, around ages 4 through 5, the child interprets others' experiences, including their thoughts and feelings. This shifting in perspective is indicative of cognitive changes: At

the first level, the child focuses on appearances, at the second level, on reality as they understand it. Hence, young children develop **social cognition,** or an understanding of their social world, however immature that understanding may be.

Typical 5-years-olds are interested in how their minds and the minds of others work. Children eventually form a **theory of mind,** an awareness and understanding of others' states of mind and accompanying actions. Children can then predict how others will think and react, particularly based on their own experiences in the world.

Current research of 2 to 5 year-olds clearly demonstrates that Piaget incorrectly assumed that preoperational children are only literally minded. In fact, these children can think logically, project themselves into others' situation and interpret their surroundings. So while the cognitive qualities of Piaget's preoperational stage may apply to some or even many children, these qualities do not apply to all children.

Memory

Memory is the ability to encode, retain, and recall information over time. Children must learn to encode objects, people, and places and later be able to recall them from long-term memory.

Young children do not remember as older children and adults. Furthermore, these children are better at recognition than at recall memory tasks. Researchers suspect several possible causes for this development. One explanation is that preschoolers may be lacking in certain aspects of brain development necessary for mature memory skills. Another explanation is that preschoolers do not have the same number and kinds of experiences to draw upon as adults when processing information. Another reason is that young children lack **selective attention,** meaning they are more easily distracted. Still another explanation is that children lack the same quality and quantity of effective mnemonic strategies as adults.

Preschoolers, nonetheless, demonstrate an intense interest in learning. What a child may lack in skills is made up for as an initiative. Children have an inherent curiosity about the world, which prompts a need to learn as much as possible and as quickly as possible. Some young

children may become frustrated when learning does not come about as quickly or remembering as efficiently as older children. When learning situations are structured so that children may succeed, setting reasonably attainable goals and providing guidance and supporting children can be exceptionally mature in their ability to process information.

Language

Language skills also continue to improve during early childhood. Language is an outgrowth of a child's ability to use symbols. Thus, as their brains develop and acquire the capacity for representational thinking, children also acquire and refine language skills.

Some researchers, like Roger Brown, have measured language development by the average number of words in a child's sentences. The more words a child uses in sentences, the more sophisticated the child's language development. Brown suggested that language develops in sequential stages: utterances, phrases with inflections, simple sentences, and complex sentences. Basic syntax, according to Brown, is not fully realized until about age 10.

Preschoolers learn many new words. Parents, siblings, peers, teachers, and the media provide opportunities for preschoolers to increase their vocabulary. Consequently, the acquisition of language occurs within a social and cultural context. Socializing agents provide more than just words and their meanings, however. These agents teach children how to think and act in socially acceptable ways. Children learn about society as they learn about language. Society's values, norms, **folkways** (informal rules of acceptable behavior), and **mores** (formal rules of acceptable behavior) are transmitted by how parents and others demonstrate the use of words.

Around the world and in the United States, some young children are **bilingual,** or able to speak more than one language. These children learn two languages simultaneously, usually as a result of growing up with bilingual parents who speak both languages at home. Many of these bilingual children may fluently speak both languages by age 4. Some ethnic children learn to speak a **dialect,** or variations of a language, before they learn to speak standard English. A debate rages

today over whether or not ethnic dialects should be considered equal in value to conventional languages.

For example, some educators believe dialects such as Ebonics (Black English) and Spanglish (Spanish English) should be taught in American classrooms alongside traditional English. According to these educators, encouraging dialects improves a child's self-esteem, increases a child's chances of understanding classroom material, and celebrates multicultural diversity. Other educators, however, worry that Ebonics and Spanglish put children at risk of not mastering standard English, which in turn puts them at a disadvantage in preparing for college and the workforce.

Later Childhood

Physical Development

Ages 7 through 11 comprises of **middle childhood.** Some authorities divide middle childhood into early-middle (age 7-9) and late-middle (ages10-11) periods. Like infants, toddlers and preschoolers, these older children grow both physically and cognitively, although their growth is slower than it was during early childhood.

Physical development in middle childhood is characterized by considerable variations in growth patterns. These variations may be due to gender, ethnic origin, genetics, hormones, nutrition, environment, or disease. While children of this age group follow the same basic developmental patterns, they do not necessarily mature at the same rate. Most girls experience a preadolescent growth spurt around age 9 or 10, while most boys experience the same growth spurt around age 11 or 12. Children who do not receive adequate nutrition or medical attention may be at risk for stunted or delayed growth development. For example, children who live in countries where malnutrition is not a problem tend to be taller than children who live in countries where malnutrition is a problem.

Physical changes, brain and nervous system development, gross and fine motor skills, and health issues are important aspects of physical development during middle childhood as in previous developmental stages.

Physical changes

By the beginning of middle childhood, children typically have acquired a leaner, more athletic appearance. Girls and boys still have similar body shapes and proportions until both sexes reach **puberty.** This is process whereby children sexually mature into teenagers and adults. After puberty, **secondary sexual characteristics**—breasts and curves in females, deeper voice and broad shoulders in males—make distinguishing females from males becomes much easier.

Girls and boys grow about 2 to 3 inches and gain about 7 pounds per year until puberty. Skeletal bones and muscles broaden and lengthen, which may cause children (and adolescents) to experience growing pains. Skeletal growth in middle childhood is also associated with losing the **deciduous teeth,** or baby teeth.

Throughout most of middle childhood, girls are smaller than boys and have less muscle mass. As girls enter puberty, however, they may be considerably larger than boys of the same age, who enter puberty a few years later. Once boys begin sexually maturing, their heights and weights eventually surpass the heights and weights of girls of the same age.

Brain and nervous system development

Brain and nervous system developments continue during middle childhood. More complex behavioral and cognitive abilities become possible as the central nervous system matures.

Early in middle childhood, a growth spurt occurs in the brain at age 8 or 9, the organ is nearly adult-size. Brain, that by development during middle childhood is characterized by growth of specific structures, especially the **frontal lobes.** These lobes, located in the front of the brain just under the skull, are responsible for planning, reasoning, social judgment, and ethical decision making, among other functions. Damage to this part of brain results in erratic emotional outbursts, inability to plan and poor judgment. The most anterior (front) portion of the frontal lobes is the **prefontal cortex,** which appears to be responsible for personality.

As the size of the frontal lobes increases, children are able to engage in increasingly difficult cognitive tasks, such as performing a series of tasks in a reasonable order. An example is assembling a mechanical toy:

unpacking the pieces, connecting the parts, making the model move by adding a power source—a series of tasks that must be completed in the correct order to achieve certain results.

Lateralization of the two hemispheres of the brain, also continues during middle childhood, as does maturation of the **corpus callosum** (the bands of neural fibers connecting the two cerebral hemispheres), and other areas of the nervous system. Interestingly, children achieve concrete operations around age 7 when the brain and nervous systems have developed a certain amount of neural connections. When these neural connections have developed, a child's ability to perceive and think about the world advances from an egocentric, magical viewpoint to a more concrete and systematic way of thinking.

Motor skills

Motor skills are behavioral abilities or capacities. **Gross motor skills** involve the use of large bodily movements, and **fine motor skills** involve the use of small bodily movements. Both gross and fine motor skills continue to refine during middle childhood.

Children love to run, jump, leap, throw, catch, climb, and balance. Children play baseball, ride bikes, roller skate, take karate lessons, take ballet lessons, and participate in gymnastics. As school-age children grow physically, they become faster, stronger, and better coordinated. Consequently, during middle childhood, children become more adept at gross motor activities.

Children enjoy using their hands in detailed ways, too. From early in preschool, children learn and practice fine motor skills. Preschool children cut, paste, mold, shape, draw, paint, create, and write. These children also learn such skills as tying shoelaces, untying knots, and flossing their teeth. Some fortunate children are able to take music lessons for piano, violin, flute, or other instruments. Learning to play an instrument helps children to further develop their fine motor skills. In short, along with the physical growth of children comes the development of fine motor skills, including the sense of competence and confidence to use these skills.

Health

Middle childhood tends to be a very healthy period of life in Western societies. The typical minor illnesses of early childhood that includes colds, coughs, and stomachaches are likely to lessen in frequency in middle childhood. This improved resistance to common illnesses is probably due to a combination of increased immunity from previous exposures and improved hygiene and nutritional practices. Minor illnesses occur, but most illnesses do not require medical attention. Minor illnesses may help children learn psychological coping skills and strategies for dealing with physical discomforts.

Major illnesses for school-age children are the same as major illnesses for younger children that includes influenza, pneumonia, cancer, human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS). But **obesity,** or being 20 percent or more above one's ideal weight, is a special health problem that occurs during the school years. About 25 percent of school-age children in the United States today are obese and the majority of these children go on to become obese adults. Obesity in adulthood is related to heart problems, high blood pressure, and diabetes. Although obese children are not at the same medical risks as obese adults, these children should master effective eating and exercise habits as early as possible to decrease the risk of later obesity- and health-related problems.

The majority of disabilities and deaths in middle childhood are the result of injuries from accidents. In the United States, nearly 22 million children are hurt in accidents each year. For children, the most common deadly accidents result from being struck by moving vehicles. Accidents may occur at, near, and away from home. Therefore, adequate adult supervision is always important. Injuries occurring at school are usually the result of playground and sports-related accidents. Consequently, children should always wear protective headgear and other safety gear when playing sports and riding bikes. Other causes of death in middle childhood include cancer, congenital defects, homicide, and deadly infections.

Cognitive Development

School-age children think systematically about multiple topics more easily than preschoolers. Older children have keener **meta-cognition**, a sense of their own inner world. These children become increasingly skilled at problem solving.

Piaget referred to the cognitive development occurring between ages 7 and 11 as the **concrete operations stage.** Piaget used the term *operations* to refer to reversible abilities that the child has not yet developed. By reversible methods, Piaget referred to mental or physical actions that can occur in more than one way, or in differing directions. While in the concrete operations stage, older children are limited to thinking concretely – in tangible, definite, exact, and uni-directional terms—based on real and concrete experiences rather than on abstractions. Older children do not use magical thinking and are not as easily misled as younger children. Unlike preschoolers, school-age children know better than to ask their parents to take them flying in the air just like the birds, which Piaget noted that children's thinking processes change significantly during the concrete operations stage. School-age children can engage in **classification,** or the ability to group according to features, and **serial ordering,** or the ability to group according to logical progression. Older children come to understand cause-and-effect relationships and become adept at mathematics and science. Comprehending the concept of **stable identity** that one's self remains consistent even when circumstances change is another concept grasped by older children. For example, older children understand the stable identity concept of a father maintaining a male identity regardless of what he wears or how old he becomes.

In Piaget's view, children at the beginning of the concrete operations stage demonstrate **conservation,** or the ability to see how physical properties remain constant as appearance and form change. Unlike preschoolers, school-age children understand that the same amount of clay molded into different shapes remains the same amount. A concrete operational child will tell you that five golf balls are the same number as five marbles, but the golf balls are larger and take up more space than the marbles.

Piaget believed that preoperational cognitive abilities are limited by **egocentrism** the inability to understand the point of view of others. But egocentrism is not found in children in the concrete operations stage. By the school years, children have usually learned that other people have their own views, feelings, and desires.

Piaget's model of cognitive development has come under increasing attacks in recent years. Modern developmentalists have frequently referred to experimental research that contradicts certain aspects of Piaget's theories. For example, cognitive theorists like Robert Siegler have explained the phenomenon of conservation as a slow, progressive change in the rules that children use to solve problems, rather than a sudden change in cognitive capacities and schemas. Other researchers have shown that younger and older children develop by progressing through a continuum of capacities rather than a series of discrete stages. In addition, these researchers believe that children understand far more than what Piaget theorized. With training, for instance, younger children may perform many of the same tasks as older children. Researchers have also found that children are not as egocentric, suggestible, magical, or concrete as Piaget held, and that their cognitive development is largely determined by biological and cultural influences.

School-age children are better at the skill of remembering than other younger children. Experiencing more of the world, older children have more to draw upon, when encoding and recalling information. In school, older children also learn how to use **mnemonic devices,** or memory strategies. Creating humorous lyrics, devising acronyms, chunking facts (breaking long lists of items into groups of three's and four's), and rehearsing facts (repeating them many times) help children memorize increasingly complicated amounts and types of information.

Youngsters may remember more when participating in cooperative learning, in which adult-supervised education relies on peers interacting, sharing, planning, and supporting each other. Develop-mentalists disagree on the relative value of cooperative learning versus **didactic learning,** in which a teacher lectures to students.

Memory

School-age children also begin to evince **meta-memory,** or the ability to comprehend the nature of memory and predict how well one will remember something. Meta-memory helps children sense how much study time is needed for next week's math test.

Childhood intelligence

Psychologists and other authorities are keenly interested in childhood intelligence. **Intelligence** is an inferred cognitive capacity that relates to a person's knowledge, adaptation, and ability to reason and act purposefully. Around the beginning of the twentieth century, Alfred Binet and Theophile Simon measured perception, memory, and vocabulary in children. These researchers divided a child's **mental age,** or level of intellectual attainment, by his or her **chronological age,** or actual age, to yield the child's **intelligence quotient (IQ).** Years later, the average IQ for a child was set at 100. Today, the two most famous

IQ tests for children are the Stanford-Binet Intelligence **Scale** and the **Wechsler Intelligence Scale for Children (WISC),** both of which have been updated numerous times.

Some psychologists indicate that the multifaceted nature of intelligence necessitates a distinction between **basic intelligence**(academic IQ) and **applied intelligence** (practical IQ). For instance, Howard Gardner proposed that children exhibit **multiple intelligences,** including musical ability, complex movement, and empathy. Similarly, Robert Sternberg proposed the **triarchic theory** of intelligence, which states that intelligence consists of three factors: information-processing skills, context, and experience. These three factors determine whether cognition or behavior is intelligent.

An individual's intelligence, at least as measured by IQ tests, remains fairly constant throughout life. Yet considerable differences in IQ scores exist across a range of individuals. These individual differences are probably the result of some combination of genetics, home and educational environment, motivation, nutrition and health, socioeconomic status, and culture.

Critics repeatedly question the value of measuring intelligence, especially when the most commonly used testing instruments are

inherently culture-specific. Critics point out that minorities score lower on IQ tests that are devised and standardized using white, middle-class subjects. These same minorities score higher on IQ tests devised and standardized using subjects from their own cultural background. Proponents of IQ tests suggest that it is possible to develop culture-fair (fair for all members in a culture) and culture-free (without cultural content) IQ tests, such as **Raven's Progressive Matrices Test.** This IQ test gauges the subject's ability to solve problems that are presented in unfamiliar designs. Proponents also claim that IQ scores effectively predict future academic performance—what these tests were originally designed to measure.

A great deal of uproar occurred in the 1970s in response to schools placing minorities into special education classes based on their IQ scores. These scores were obtained from culturally biased IQ tests. Today, IQ tests cannot be used as academic achievement or placement tests.

3.2.3 Adolescence

Physical Development

Adolescence is the transition period between childhood and adulthood which encompasses ages 12 to 19. It is a time of tremendous change and discovery. During these years, physical, emotional, and intellectual growth occurs at a dizzying speed, challenging the teenager to adjust to a new body, social identity, and expanding world view.

Perhaps no aspect of adolescence is as noticeable as the physical changes that teenagers experience. Within the span of a few years, a dependent child becomes an independent and contributing adult member of society. The start of adolescence also marks the beginning of Freud's final stage of psychosexual development, the **genital stage,** which pertains to both adolescence and adulthood.

Puberty is the time of rapid physical development, signaling the end of childhood and the beginning of sexual maturity. Although puberty may begin at different times for different people, by its completion girls and boys without any developmental problems will be structurally and hormonally prepared for sexual reproduction. The speed at which adolescents sexually mature varies; the beginning of puberty in both genders falls within a 6 to 7 years. In any grouping of 14-year-olds, the

range of example, is where one is likely to see teenagers in assorted stages of development. Some appearing as older children and others as fully mature adolescents. Eventually, though, everyone catches up.

Hormones are responsible for the development of both **primary sex characteristics** (structures directly responsible for reproduction) and **secondary sex characteristics** (structures indirectly responsible for reproduction). Examples of primary sex characteristics are the penis in boys and the uterus in females. An example of secondary sex characteristics is the growth of pubic hair in both genders.

During childhood, males and females produce roughly equal amounts of male (androgen) and female (estrogen) hormones. At the onset of puberty, the pituitary gland stimulates hormonal changes throughout the body, including in the adrenal, endocrine, and sexual glands. The timing of puberty seems to result from a combination of genetic, environmental, and health factors.

An early sign of maturation is the **adolescent growth spurt,** or a noticeable increase in height and weight. The female growth spurt usually begins between ages 10 and 14, and ends by age 16. The male growth spurt usually begins between ages 10 and 16, and ends by age 18.

Girls generally begin puberty a few years earlier than boys, somewhere around ages 11 to 12. Increasing levels of estrogen trigger the onset of puberty in girls. They grow taller, their hips widen; their breasts become rounder and larger, hair grows on the legs, under the arms, and around the genitals, the labia thicken; the clitoris elongates; and the uterus enlarges. Around the age of 12 or 13, most girls today begin **menstruating,** or having menstrual periods and flow. The onset of menstruation is termed **menarche.** After puberty, females can become pregnant.

Increasing levels of the hormone testosterone trigger the onset of puberty in boys around ages 12 to 14. Boys become taller, heavier, and stronger. Their voices deepen; their shoulders broaden; hair grows under the arms, on the face, around the genitals, and on other parts of the body. The testes produce sperm; and the penis and other reproductive organs enlarge. After puberty, boys can impregnate

sexually mature girls. Teenage boys may also experience the harmless release of semen during sleep, termed **nocturnal emissions** (wet dreams).

The resulting changes of puberty can have wide‑ranging effects on teenagers' bodies. For both adolescent girls and boys, differences in height and weight, general awkwardness, emotional ups‑and‑downs, and skin problems (**acne vulgaris,** or pimples) are common. These and other changes, including the timing of sexual maturation, can be sources of great anxiety and frustration for the blossoming youth.

Cognitive Development

Most adolescents reach Piaget's stage of **formal operations** (ages 12 and older), in which they develop new tools for manipulating information. Previously, as children, they could only think concretely, but in the formal operations stage they can think abstractly and deductively. Adolescents in this stage can also consider future possibilities, search for answers, deal flexibly with problems, test hypotheses and draw conclusions about events they have not been experienced firsthand.

Cognitive maturity occurs as the brain matures and the social network expands, which offers more opportunities for experimenting with life. Because this worldly experience plays a large role in attaining formal operations, not all adolescents enter this stage of cognitive development. Studies indicate, however, that abstract and critical reasoning skills are teachable. For example, everyday reasoning improves between the first and last years of college, which suggests the value of education in cognitive maturation.

Intellectual development

According to Robert Sternberg's **triarchic theory,** intelligence is comprised of three aspects: **componential** (the critical aspect), **experiential** (the insightful aspect), and **contextual** (the practical aspect). Most intelligence tests only measure componential intelligence, although all three are needed to predict a person's eventual success in life. Ultimately, adolescents must learn to use these three types of intelligence.

Componential intelligence is the ability to use internal information‑processing strategies when identifying and thinking about

solving a problem, including evaluating results. Individuals who are strong in componential intelligence do well on standardized mental tests. Also involved in componential intelligence is **metacognition,** which is the awareness of one's own cognitive processes an ability that some experts claim is vital to solving problems.

Experiential intelligence is the ability to transfer learning effectively to new skills. In other words, it is the ability to compare old and new information, and to put facts together in original ways. Individuals who are strong in experiential intelligence cope well with novelty and quickly learn to make new tasks automatic.

Contextual intelligence is the ability to apply intelligence practically, including taking into account social, cultural, and historical contexts. Individuals who are strong in contextual intelligence easily adapt to their environments, can change to other environments, and are willing to fix their environments when necessary.

An important part of contextual intelligence is **tacit knowledge,** or savvy, which is not directly taught. Tacit knowledge is the ability to work the system to one's advantage. Examples are knowing how to cut through institutional red tape and maneuvering through educational systems with the least amount of hassle. People with tacit knowledge are often thought of as street‐smart.

Moral development and judgment

Another facet of cognitive development is **moral development and judgment,** or the ability to reason about right and wrong. Lawrence Kohlberg proposed a theory of moral development with three levels consisting of six stages. The first level, **preconventional morality,** has to do with moral reasoning and behavior based on rules and fear of punishment (Stage 1) and nonempathetic self‐interest (Stage 2). The second level, **conventional morality,** refers to conformity and helping others (Stage 3) and obeying the law and keeping order (Stage 4). The third level, **postconventional morality,** is associated with accepting the relative and changeable nature of rules and laws (Stage 5) and conscience‐directed concern with human rights (Stage 6).

Moral development depends, in part, on the appearance of empathy, shame, and guilt. Internalization of morality begins with **empathy,** the

ability to relate to others' pain and joy. Children in their first year begin to show signs of basic empathy in that they become distressed when those around them do likewise. Internalization of morality also involves shame (feelings of not living up to others' standards) and guilt (feelings of not living up to personal standards). Shame develops around age 2, and guilt develops between ages 3 and 4. As children mature cognitively, they evidence an increasing ability to weigh consequences in light of self‐interest and the interest of those around them. Teenagers typically demonstrate conventional morality as they approach their 20s, although some may take longer to gain the experience they need to make the transition.

Research tends to support much of Kohlberg's model; however, the theory has been criticized on several counts. According to some experts, the model favors educated individuals who are verbally sophisticated. People may also regress in their moral reasoning or behave differently than their moral reasoning may predict. Culture, family factors, and gender affect the attainment of the higher levels of moral judgment; hence, Kohlberg's model has been criticized as limited in terms of certain cultures, family styles, and distinction between differences in male and female moral development.

An alternative to Kohlberg's model is that of Carol Gilligan. Gilligan proposed that men and women evince moral reasoning that is equally viable but that appears in different forms. She notes that men tend to be more concerned with justice, while women lean toward compassion. The differences most often appear in circumstances where men and women make moral judgments.

Similar to moral development is **religious development.** The three levels are the same as Kohlberg's: **preconventional** (fundamentalistic lack‐or‐white and egocentric thinking based on religious laws and rules); **conventional** (conformity to accepted religious traditions and standards); and **postconventional** (relativistic gray thinking; the acknowledgment of religious contradictions, human interpretations, and the changeable nature of rules). This latter stage is reached when the person has moved out of Piaget's **concrete operations** and into **formal operations** or **postformal operations,** both of which involve extensive

use of critical thinking skills. As with moral development, teenagers often evidence conventional religious thinking as they approach their 20s. Some move on to post-conventional religious thinking during college, where they are exposed to a large number of different people and viewpoints.

Health Issues

Adolescent health problems are often correlated with low socioeconomic status, poor diet, inadequate health care, risk‑taking activities, personality issues, and a sedentary lifestyle. Yet the teenage years are typically healthy, although major health problems can emerge. Three possible major health problems include eating disorders, depression, and substance abuse.

Eating disorders

Eating disorders involve a preoccupation with food. The most common of these among teenagers is **obesity,** which is defined as a skin‑fold measurement in the 85th percentile for one's height. Obesity carries with it the potential for social stigma, psychological distress, and chronic health problems. Approximately 15 to 20 percent of adolescents are obese.

A preoccupation with not becoming obese can lead to **anorexia nervosa, or self‑starvation. The typical anorexic is a model** teenager who is obsessed with food buying, cooking, and preparing it. But who eats very little herself. She is probably a perfectionist and has a distorted self‑perception of her body, believing herself to be too fat. The anorexic is generally 20 percent under her ideal weight. As many as 1 percent of adolescent girls are anorexic, and 2 to 8 percent of them eventually die from starvation.

Related to anorexia is **bulimia nervosa** which is a disorder that follows a pattern of binge‑purge eating. After eating an enormous amount of food, bulimics vomit, take laxatives, or exercise vigorously to burn off recently consumed calories. Bulimics, like anorexics, are obsessed with food, weight, and body shape. Unlike anorexics, they maintain a relatively normal body weight.

Both anorexia and bulimia are far more common among females than males. They also cross all levels of society. The exact causes of these eating disorders are unknown.

Depression

As many as 40 percent of adolescents have periods of **depression,** a type of mood disorder characterized by feelings of low self‑esteem and worthlessness, loss of interest in life activities, and changes in eating and sleeping patterns. Adolescent depression is often due to hormonal changes, life challenges, and/or concerns about appearance. More teenage females than males suffer from depression.

A real and tragic consequence of teenage depression is suicide. As many as 13 percent of adolescents report having attempted suicide at least once. Risk factors include feelings of hopelessness, suicidal preoccupation, a previous suicide attempt, having a specific plan to carry out the suicide, having access to firearms or sleeping pills, and stressful life events. As with adults, more teenage females attempt suicide, but more teenage males actually die from their attempts. Females use less violent methods (such as taking pills) than males, who tend to use more extreme and irreversible methods (such as shooting themselves).

Substance abuse

Some adolescents abuse substances to escape the pains of growing up, to cope with daily stresses, or to befriend peers who are part of a particular crowd. As alluring symbols of adulthood, alcohol and tobacco/nicotine are the easily available drugs of choice for adolescents. Alcohol is a depressant that acts to lower inhibitions while inducing a pleasant state of relaxation. Nicotine is a stimulant that allegedly produces a pleasant state of arousal. Marijuana, contains **tetrahydrocannabinol (THC),** is the most widely used illicit substance in the United States. It produces a mild altered state of consciousness.

Drug use among teenagers is less common today than it was in the 1960s and 1970s, although many young people still smoke, drink, and use illegal drugs. In a 1989 study, 35 percent of high school seniors reported having had at least five drinks in a row at least once in the previous two weeks. Also, 24 percent of high school seniors reported occasionally using marijuana.

3.2.4 Adulthood

Physical Development

Development takes on new meaning in adulthood because the process is no longer defined by physical and cognitive growth spurts. Adulthood, which encompasses the majority of a person's life span, is marked instead by considerable psychosocial gains that are coupled with steady but slow physical decline.

Age clocks, or the internal sense of timing of physical and social events, determine the various life stages through which adults pass. Although people age at different rates, the majority of Americans, reinforced by social norms, pass through a series of predictable periods.

Perhaps the best‐known stage theory of **adult development** is that offered by Daniel Levinson . According to Levinson, the ages of 17 to 45 encompass **early adulthood,** which he divides into the **novice phase** (17–33) and the **culminating phase** (33–45). Levinson further divides the novice phase into the stages of **early adult transition** (17–22), **entering the adult world** (22–28), and **age‐30 transition** (28–33). The **culminating phase** (33–45) consists of the **settling down** (33–40) and **midlife transition**(40–45) stages. As with any stage theory, these stages are only a guide for the development that normally occurs along a continuum. Not everyone progresses through each stage at exactly the same age.

The young adult years are often referred to as the peak years. Young adults experience excellent health, vigor, and physical functioning. Young adults have not yet been subjected to age‐related physical deterioration, such as wrinkles, weakened body systems, and reduced lung and heart capacities. Their strength, coordination, reaction time, sensation (sight, hearing, taste, smell, touch), fine motor skills, and sexual response are at a maximum.

Additionally, both young men and women enjoy the benefits of society's emphasis on youthfulness. They typically look and feel attractive and sexually appealing. Young men may have healthy skin, all or most of their hair, and well‐defined muscles. Young women may have soft and supple skin, a small waistline, and toned legs, thighs, and buttocks. Early in adulthood, neither gender has truly suffered from any **double**

standard of aging: mainly, the misconception that aging men are distinguished, but aging women are over the hill.

With good looks, great health, and plenty of energy, young adults dream and plan. Adults in their 20s and 30s set many goals that they intend to accomplish—from finishing graduate school, to getting married and raising children, to becoming a millionaire before age 30. Young adulthood is a time when nothing seems impossible. With the right attitude and enough persistence and energy, anything can be achieved.

Intellectual Development

Does intelligence increase or decrease during adulthood? This question has plagued psychologists for decades. Cross‐sectional studies of IQ tend to show that young adults perform better than middle‐aged or older adults, while longitudinal studies of IQ appear to indicate that people increase in intelligence through the decades, at least until their 50s. But the issue of intellectual development in adulthood is not so straightforward or simple. The results of the cross sectional studies younger adults, as a group, who do better on IQ tests may be due more to **cohort influences,** such as longer schooling or greater exposure to television than that enjoyed by the previous generation, than to aging influences. The results of the longitudinal studies over time, persons do better on IQ tests may be due to the effects of practice, increased comfort taking such tests, or the tendency for those who remain in the studies to perform better than those who drop out.

Attempts to measure IQ are complicated by the fact that there are different types of intelligence. **Crystallized intelligence** is the ability to use learned information collected throughout a lifetime, and **fluid intelligence** is the ability to think abstractly and deal with novel situations. Young adults tend to score higher on tests of fluid intelligence, while middle adults tend to score higher on tests of crystallized intelligence. Variables unique to young, middle, and older adults complicate any comparison of IQs among the groups. All things considered, the results of traditional IQ tests suggest that intelligence usually continues at least at the same level through young and middle adulthood.

Thinking patterns

Young adult thinking, especially in a person's early 20s, resembles adolescent thinking in many ways. Many young people see life from an idealistic point of view, in which marriage is a fairy tale where lovers live happily ever after, political leaders never lie or distort the truth, and salespeople always have consumers' best interests in mind. People in their 20s have not always had the benefit of multiple life experiences, so they may still view the world from a naively trusting and black‐or‐white perspective. This is not to say that young adults do not question their world, challenge rules, or handle conflicts. These, and more, are normal developmental tasks that lead to realistic thinking and recognition of life's ambiguities. But until young adults reach that level of thinking, they may want absolute answers from absolute authorities.

Many young adults particularly those who have attended college develop the ability to reason logically, solve theoretical problems, and think abstractly. They have reached Piaget's **formal operations** stage of cognitive development. During this stage, individuals can also classify and compare objects and ideas, systematically seek solutions to problems, and consider future possibilities.

As young adults confront and work through the gray areas of life, some may go on to develop **postformal thinking,** or practical street smarts. Developing the **wisdom** associated with postformal thinking is a lifelong process, which begins in the teenage years and is fully realized in the older adult years.

Health

Health and physical fitness during young adulthood are excellent. People in their 20s and 30s perform at exceedingly high levels on tests of endurance and stamina. They generally are at their best in terms of physical conditioning and overall sense of well‐being.

Lest the picture seem too rosy, young adults are not completely immune to the effects of aging. The closer they get to age 40, the more physical limitations they begin to notice. In fact, many young adults detect a significant decrease in energy and increase in health concerns after 40. However, with proper diet and exercise, the physical and psychological vitality that accompanies young adulthood can be maintained well into the 40s and beyond.

The most common health problems of young adulthood are arthritis, asthma, diabetes, depression and other mental problems, hypertension (high blood pressure), multiple sclerosis, and ulcers. Other conditions, such as atherosclerosis (hardening of the arteries), cirrhosis of the liver, heart and lung problems, kidney problems, and a variety of other diseases, may not exhibit symptoms at this stage, but may already be causing internal damage. Two additional categories of health concerns during young adulthood are disabilities and sexually transmitted diseases.

Disabilities

A **physical disability** is any physical defect, change, difficulty, or condition that has the potential to disrupt daily living. It may be present from birth, result from disease or injury, or develop later. A physical disability, for example, may be the absence of a vital organ from birth, deafness that develops in childhood, a spinal cord injury from a motorcycle accident, or a chronic condition like multiple sclerosis. The most common physical disabilities in adults are cerebral palsy, blindness, deafness, spinal cord injuries, and a number of chronic medical conditions, such as diabetes.

Persons who evidence subnormal intellectual functioning and social skills beginning before age 18 are **developmentally disabled**(mentally retarded). By definition, the developmentally disabled have an IQ of 70 or less and do not demonstrate culturally appropriate levels of social skills, living skills, responsibility, communication, and personal independence for their age.

Adults with a **psychiatric disability** (mental illness, or psychological disturbance) struggle with mild to incapacitating emotional problems and limitations that are often caused by either anxiety or affective disorders. **Anxiety disorders** are characterized by bouts of anxiety and/or panic. The recurrence of such episodes prompts an avoidance of people, places, and things. In many cases, the individual knows his or her anxiety is irrational, but is unable to master it. A combination of drug and psychological therapies can effectively treat anxiety disorders, which can otherwise severely disrupt life activities.

Affective disorders (mood disorders) cause a person to experience abnormally high and/or low feelings. Although several types of mood disorders exist, the two most common are **unipolar depression,** marked by feelings of self‑blame, sadness, guilt, and apathy; and **bipolar disorder (manic‑depressive), marked by alternating periods of** depression and **mania** (extreme hyperactivity and elation). Most affective disorders are treatable with a combination of medications and counseling. Unipolar depression responds well to antidepressant medications; bipolar disorder, to lithium carbonate.

Sexually transmitted diseases

Certain sexually transmitted diseases (STDs) are caused by microscopic single‑cell organisms known as **bacteria**. These organisms invade cells of the body, causing infection and disease. The most common bacterial STDs are gonorrhea, nongonococcal urethritis, nongonococcal cervicitis, chlamydia, and syphilis. Other STDs are caused by **viruses,** noncellular, microscopic particles that replicate themselves within invaded cells. Antibiotic medications are ineffective against them, making viruses very difficult or impossible to eliminate. The most common viral STDs are herpes, genital warts, and human immunodeficiency virus (HIV).

HIV is the virus that causes **acquired immunodeficiency syndrome (AIDS)**. HIV does not directly cause death; rather it depresses the immune system of a victim to the point that infection and disease overwhelm the body's natural defenses. For HIV to attack human cells, it must first attach itself to special receptors on the cells' surface. Through several complex chemical reactions, cells attacked by HIV become factories that produce more viruses, which in turn attack more cells, which in turn become factories, and so on. Eventually the immune system becomes so depressed that almost any disease can easily overwhelm bodily defenses.

Based on medical research, HIV appears to be spread through the exchange of body fluids (blood, vaginal secretions, and semen), not through casual contact. The following are the most probable means of transmitting and contracting HIV:

1. Engaging in sexual activity that involves the exchange of fluids.

2. Receiving contaminated blood.

3. Using contaminated hypodermic needles.

4. Passing from an infected mother to her child during pregnancy or childbirth.

Although AIDS is presently incurable, treatments are available that slow progression of the disease by restoring immune system functioning. People can best protect themselves from HIV and AIDS by steering clear of high‐risk activities and partners, as well as by practicing abstinence, using condoms during sex, and not sharing needles.

Death and young adulthood

Death rates during young adulthood are lower than during any other period of the life span. Except for HIV and AIDS in males and malignancies in females, the leading cause of death during the 20s and 30s is accidents. Death rates, however, double during each decade after age 35.

Socioeconomic status and race also have an impact on health and death rates. Less educated, urban, and poorer minorities tend to have the worst health and are at the greatest risk of premature death from violent crimes. For example, minority Americans between the ages 25 and 45 are more likely to die as a result of homicide than their white counterparts. Additionally, these same Americans are more likely to die of a drug overdose than whites of the same age.

3.2.5 Senescence

Physical Development

Although no longer at the peak level of their young adult years, middle‐aged adults still report good health and physical functioning, However, as a result of the passage of time, middle adults undergo various physical changes. Decades of exposure and use take their toll on the body as wrinkles develop, organs no longer function as efficiently as they once did, and lung and heart capacities decrease. Other changes include decreases in strength, coordination, reaction time, sensation (sight, hearing, taste, smell, touch), and fine motor skills. Also common among middle adults are the conditions of **presbyopia** (farsightedness or difficulty reading) and **presbycusis**(difficulty hearing high‐pitched sounds). Still, none of

these changes is usually so dramatic that the middle adult cannot compensate by wearing glasses to read, taking greater care when engaging in complex motor tasks, driving more carefully, or slowing down at the gym. Of course, people age at different rates, so some 40 year olds may feel middle‐aged long before their 50‐year‐old counterparts. Most people, however, describe feeling that they have reached midlife by their mid‐50s.

The biopsychosocial changes that accompany midlife—specifically, **menopause** (the cessation of menstruation) in women and the **male climacteric**(male menopause) in men—appear to be major turning points in terms of the decline that eventually typifies older adulthood. None of the biological declines of middle and late adulthood needs to be an obstacle to enjoying all aspects of life, including sex. For example, too often society has erroneously determined that menopause inevitably means the end of female sexuality. However, while menopause gives rise to uncomfortable symptoms, such as hot flashes, headaches, irritability, dizziness, and swelling in parts of the body, post‐menopausal women frequently report improved sexual enjoyment and desire, perhaps because they no longer worry about menstruation and pregnancy. For these same reasons, women who have undergone a **hysterectomy,** or surgical removal of the uterus, frequently report improved sexual response.

Men also experience biological changes as they age, although none is as distinct and pronounced as female menopause. Testosterone production lessens, which creates physical symptoms, such as weakness, poor appetite, and inability to focus on specific tasks for extended periods. However, this reduction in testosterone does not fully explain the psychological symptoms of anxiety and depression that may accompany middle adulthood, indicating that the male climacteric probably has more to do with emotional rather than physical events. During middle age, men are faced with the realization that they are no longer 20 years old and that they are not going to accomplish all they wanted to in life. They may also feel less sexually attractive and appealing, as they discover that seemingly overnight they have gained extra weight around the waist, are balding, and are feeling less energetic than they used to.

Because of society's emphasis on youthfulness and physical appearances, middle‐aged men and women may sometimes suffer

from diminished self‐esteem. Women, for instance, experience the American **double standard** of aging: Men who are graying are perceived as distinguished, mature, and sexy, while women who are graying are viewed as being over the hill or past their prime. This double standard, coupled with actual physical changes and decline, does little to help middle adults avoid a **midlife crisis**.

Intellectual Development

Cross‐sectional studies of IQ show young adults performing better than middle or older adults, while longitudinal studies of IQ tend to show the same people increasing in intelligence at least until their 50s. The results of the cross‐sectional studies may be due more to **cohort influences** includes the effects of practice, increased comfort taking such tests, and the tendency for those who remain in the studies to perform better than those who drop out.

Young adults score higher on tests of **fluid intelligence,** which is the ability to think abstractly and deal with novel situations, while middle adults improve over time on tests of **crystallized intelligence,**which involves using learned information collected throughout a life span. In summary, the results of traditional IQ tests imply that intelligence continues at approximately the same level at least into middle adulthood, and probably beyond.

Thinking patterns

Middle‐age adult thinking differs significantly from that of adolescents and young adults. Adults are typically more focused in specific directions, having gained insight and understanding from life events that adolescents and young adults have not yet experienced. No longer viewing the world from an absolute and fixed perspective, middle adults have learned how to make compromises, question the establishment, and work through disputes. Younger people, on the hand, may still look for definitive answers.

Many middle‐age adults have attained Piaget's stage of formal operations, which is characterized by the ability to think abstractly, reason logically, and solve theoretical problems. Many of the situations facing adults today require something more than formal operations. That is, the uncertain areas of life may pose problems too ambiguous and

inconsistent for such straightforward thinking styles. Instead, middle adults may develop and employ **postformal thinking,** which is characterized by the objective use of practical common sense to deal with unclear problems. An example of postformal thinking is the middle adult who knows from experience how to maneuver through rules and regulations and play the system at the office. Another example is the middle adult who accepts the reality of contradictions in his or her religion, as opposed to the adolescent who expects a concrete truth in an infallible set of religious doctrines and rules. Postformal thinking begins late in adolescence and culminates in the practical wisdom so often associated with older adulthood.

Adult learners

Does intellectual development stop at age 22? Not at all. In fact, in recent years, colleges and universities have reported an increased enrollment of **adult learners** are the students age 25 or older. Of course, labeling this age group as adult learners is not to imply that the typical college student is not also an adult. Academic institutions typically identify those outside the 18–21 range as adults, because most have been working and rearing families for some time before deciding to enter or reenter college. Compared with younger students, adult learners may also have special needs that include anxiety or low self‐confidence about taking classes with younger adults, feelings of academic isolation and alienation, fears of not fitting in, or difficulties juggling academic, work, and domestic schedules.

Adults most often choose to go to college for work‐related purposes. Many employers require workers to attain certain levels of education in order to qualify for promotions. Other workers go to college to learn new skills in preparation for another career. Additionally, certain organizations, such as state licensing boards, may require professionals to have a certain number of **continuing education** hours each year to maintain their licenses. Finally, adults may also return to college simply for personal enrichment.

Many adults today choose **distance education** as their primary learning method. Numerous educational institutions offer accredited courses, certificates and undergraduate and graduate degrees by correspondence or via alternative learning formats, such as intensive

study classes conducted one weekend per month, telecourses provided over the television, or virtual classrooms set up on the Internet. Some of the programs have minimal **residency requirements** (time actually spent on campus); others do not, which benefits adults in rural areas who use these alternative methods to access studies that were previously unavailable to them. Adult students who successfully complete external programs tend to be highly self‐motivated and goal‐oriented.

Health

Health during middle age is typically good to excellent. In fact, American middle adults are quite healthy, especially those who are college‐educated, wealthier (with an annual income over $35,000), and white. The most common health problems experienced during middle age are arthritis, asthma, bronchitis, coronary heart disease, diabetes, genitourinary disorders, hypertension (high blood pressure), mental disorders, and strokes (cerebrovascular accidents). AIDS has also become an increasingly frequent health problem in this age group.

Stress, or the internal sense that one's resources to cope with demands will soon be depleted, is present in all age groups, although it seems to be unavoidable during middle age. Middle adults are faced with **stressors,** such as the challenges of raising a family, paying their mortgages, facing layoffs at the office, learning to use technology that is continually changing, or dealing with chronic health ailments.

All stressful events need not be negative **(distressors),** however. Psychiatrists Holmes and Rahe note that positive events **(eustressors),** such as marriage, vacations, holidays, and winning the lottery, can be just stressful as negative ones. They also indicated that the higher a person's stress levels, including the number of good or bad stresses being experienced, the more likely that person is to develop an illness within two years.

Resistance to stress, known as **hardiness,** varies from person to person. Hardiness is probably due to a combination of a person's **cognitive appraisal,** or interpretation, of the stresses, the degree to which he or she feels in control of the stresses, and his or her personality type and behavioral patterns. Some people, such as easygoing type B's, seem less bothered by stress and are thus better

equipped physically to handle both negative and positive stresses than are other personality types, such as type A's, or more anxious people.

Most everyone considers death during middle age as being a premature occurrence. Even so, the death rate doubles during each decade after 35, and unlike death in adolescence and young adulthood, death during middle adulthood is more often the result of natural causes than accidents. Socioeconomic status and race also have an impact on health and death. Typically, less educated, urban, and poorer minorities have the worst health, frequently due to limited access to necessary medical care. The death rate for middle‐aged black Americans is nearly twice that of their white counterparts.

Perhaps the place where stress is most keenly felt during middle age is at work. Middle adults may feel that their competence is in question because of their age, or middle adults may feel pressured to compete with younger workers. Research indicates that age has less to do with predicting job success than do tests of physical and mental abilities.

The most common sources of stress in the workplace include forced career changes, lack of expected progress (including promotions and raises), lack of creative input into decision making, monotonous work, lack of challenging work, inadequate pay, feelings of being underutilized, unclear procedures and job descriptions, conflicts with the boss or supervisor, lack of quality vacation time, **workaholism** (addiction to work), and sexual harassment. Long‐term job stress can eventually result in **burnout,** a state of mental exhaustion characterized by feelings of helplessness and loss of control, as well as the inability to cope with or complete assigned work. Short of resigning, interventions to prevent burnout include using standard stress‐reduction techniques, such as meditation or exercise, and taking longer breaks at work and longer vacations from work.

Most middle adults can be categorized as either successful in a stable career chosen during young adulthood or ready for a new career. Career changes are sometimes the result of reevaluation, or a **midcareer reassessment,** which can certainly be stressful. Such reexamination of one's vocation can come about for many reasons, such as feeling trapped in a career or even wanting to make more money. One recent trend, however, is for middle adults to leave high‐paying professions to

take on more humanitarian roles, such as ministers, social workers, or counselors.

The greatest source of job stress is **unemployment,** especially when termination comes suddenly. Besides wrestling with issues of self‑esteem, unemployed workers must also deal with the financial hardship brought about by loss of income. As may be expected, unemployed persons who have alternative financial resources and who also cognitively reframe their situations tend to cope better than those who do not.

3.2.6 Old Age

Physical Development

Daniel Levinson depicts the **late adulthood** period as those years that encompass age 65 and beyond. Other developmental psychologists further divide later adulthood into **young‑old** (ages 65–85) and **old‑old** (ages 85 and beyond) stages.

Today, 13 percent of the population is over the age of 65, compared with 3 percent at the beginning of this century. This dramatic increase in the demographics of older adulthood has given rise to the discipline of **gerontology,** or the study of old age and aging. **Gerontologists** are particularly interested in confronting **ageism,** or prejudice and discrimination against older adults.

Aging inevitably means physical decline, some of which may be due to lifestyle, such as poor diet and lack of exercise, rather than illness or the aging process. Energy reserves dwindle. Cells decay. Muscle mass decreases. The immune system is no longer as capable as it once was in guarding against disease. Body systems and organs, such as the heart and lungs, become less efficient. Overall, regardless of people's best hopes and efforts, aging translates into decline.

Even so, the speed at which people age, as well as how aging affects their outlook on life, varies from person to person. In older adulthood, people experience both **gains** and **losses.** For instance, while energy is lost, the ability to conserve energy is gained. Age also brings understanding, patience, experience, and wisdom—qualities that improve life regardless of the physical changes that may occur.

Aging in late adulthood profoundly affects appearance, sensation, and motor abilities. An older adult's appearance changes as wrinkles appear and the skin becomes less elastic and thin. Small blood vessels break beneath the surface of the skin, and warts, skin tags, and age spots (liver spots) may form on the body. Hair thins and turns gray as melanin decreases, and height lessens perhaps by an inch or two as bone density decreases. The double standard of aging applies to men and women in older adulthood just as it did in middle adulthood. Older men may still be seen as distinguished, while older women are labeled as grandmotherly, over the hill, and past the prime of life.

During late adulthood, the senses begin to dull. With age, the lenses of the eye discolor and become rigid, interfering with the perception of color and distance and the ability to read. Without corrective glasses, nearly half the elderly population would be legally blind. Hearing also diminishes, especially the ability to suspiciousness or even a mild form of **paranoia** which is unfounded distrustfulness, this is in response to not being able to hear well. They may attribute bad intentions to those whom they believe are whispering or talking about them, rather than correctly attributing their problems to bad hearing. Hearing problems can be corrected with hearing aids, which are widely available.

The sense of taste remains fairly intact into old age, even though the elderly may have difficulty distinguishing tastes within blended foods. By old age, however, the sense of smell shows a marked decline. Both of these declines in sensation may be due to medications, such as antihypertensives, as well as physical changes associated with old age.

In addition to changes in appearance and the dulling of the senses, reflexes slow and fine motor abilities continue to decrease with old age. By late adulthood, most adults have noticed a gradual reduction in their response time to spontaneous events. This is especially true of older adults who drive. While routine maneuvers on familiar streets may pose fewer problems than novel driving situations, older adults' reaction times eventually decline to the point that operating a vehicle is too hazardous. However, many elderly people are hesitant to give up driving because the sacrifice would represent the end of their personal autonomy and freedom.

Generally, older adults score lower overall on tests of manual dexterity than do younger adults. Older adults may find that their fine motor skills and performance speed decrease in some areas but not in others. For instance, an elderly lifelong pianist may continue to exhibit incredible finger dexterity at the keyboard, but may at the same time find that taking up needlepoint as a hobby is too difficult.

Aging also takes its toll on sexuality. Older women produce less vaginal lubrication, and the vagina becomes less stretchable because of reduced levels of female hormones. Older men are less able to attain erections and orgasms than are younger men. This may be due to reduced levels of testosterone and fewer secretions from the accessory sex glands. Likewise, older men have less urge to ejaculate, and their **refractory periods,** or the waiting time before they can regain an erection, may last longer.

Physical changes in sexual ability don't have to prevent older adults from enjoying sex. Although fewer in orgasmic contractions, orgasm continues to be a pleasurable event for both genders. In fact, older people may find sex to be slower and more sensual. Older women relax because they no longer fear pregnancy, older men's erections last longer, and neither is as anxious, insecure, or hurried as they may have been decades before. Regular sexual practice also may help older adults maintain their sexual interest and prowess.

Intelligence and Memory

People often fear that aging will cause their intellect to disappear, giving way to cognitive impairment and irrationality. However, intellectual decline is not an inevitable consequence of aging. Research does not support the stereotypic notion of the elderly losing general cognitive functioning or that such loss, when it does occur, is necessarily disruptive. Older adults tend to learn more slowly and perform less well on tasks involving imagination and memorization than do younger adults, but what older adults may be lacking in terms of specific mental tasks, they make up for in **wisdom,**or expert and practical knowledge based on life experience.

Many older adults complain about not being able to remember things as well as they once could. Memory problems seem to be due to sensory storage problems in the **short - term** rather than **long - term** memory processes. That is, older adults tend to have much less difficulty

recalling names and places from long ago than they do acquiring and recalling new information.

Practice and repetition may help minimize the decline of memory and other cognitive functions. Researchers have found that older adults can improve their scores on assorted tests of mental abilities with only a few hours of training. Working puzzles, having hobbies, learning to use a computer, and reading are a few examples of activities or approaches to learning that can make a difference in older adults' memory and cognitive functions.

Recent decades have witnessed older adults' growing interest in continuing their education. In fact, many colleges and community centers offer classes for free or at a significant discount for senior citizens. Although keeping up with a class of 20 year olds may be a challenge, older adults can learn new information if it is presented clearly, slowly, and over a period of time. Older adults also can enrich the learning process for others through the insight and wisdom they've gained from life experience. Younger students often remark that they appreciate the practical perspective that their older colleagues offer.

Older adults who have kept their minds active and fit continue to learn and grow, but perhaps more gradually than their younger colleagues. Patience and understanding (on the part of both the elderly and their significant others), memory training, and continued education are important for maintaining mental abilities and the quality of life in the later years.

Health

Although the average life expectancy is 79 for females and 72 for males, older adulthood can easily extend 20 years or more beyond these figures. As older adults age, most report increasing health problems. Even so, only about 5 percent of adults over age 65 and 25 percent of those over age 85 live in nursing homes, foster care (where elderly people live with a family licensed by the state to care for aging adults), or other long‐term care facilities. With medical advances and continued improvements in health‐care delivery, the older population is expected to increase in its numbers and report better health. Estimates are that within the next 30 years, one out of every five Americans will be an older adult.

Although most older adults have at least one chronic health problem, such ailments need not pose limitations on activities well into the adults'

80s and beyond. The most common medical concerns during older adulthood are arthritis and rheumatism, cancer, cataracts of the eyes, dental problems, diabetes, hearing and vision problems, heart disease, hypertension, and orthopedic injuries. Because the elderly are at greater risk of losing their balance and falling, hip fractures and breakages are particularly common and dangerous in this age group.

Contracting colds and flus can have especially serious repercussions for the elderly. This is due, in part, to the reduced capacity of older adults' body organs and immune system to fight disease. Unfortunate, but not uncommon, is the following scenario: An elderly person falls at home and breaks a hip bone, undergoes successful hip‑replacement surgery, and then dies two weeks later from postoperative pneumonia or other infections because of reduced reserve capacity and inability to recover from infection.

Inadequate nutrition and the misuse of medication also may be implicated in older adults who suffer from poor health. By the time adults reach age 65, they need 20 percent fewer calories than they did in their youth, but they still need the same amount of nutrients. This may explain, in part, why so many older Americans are overweight but undernourished. Additionally, cooking becomes a hassle for many older adults, and they find it easier to eat fast food, junk food, or nothing at all. Furthermore, many elderly unintentionally overuse prescription medication or combine medications that, when used together, produce toxic effects. As the body ages and potentially becomes more sensitive to the effects of prescription medications, drug dosages should be carefully monitored and assessed by a physician. Many elderly who have been hospitalized in near‑death condition begin to recover as soon as their medications are reduced or stopped.

Life expectancy can be prolonged through exercise. Older adults who have kept active, remained fit, and eaten wholesome foods throughout their lives tend to fare better than those who have not. This should be a lesson to younger adults who have an opportunity to modify their health habits early in life.

Dementia and Alzheimer's disease

The mental, emotional, and behavioral problems typically encountered by older adults are depression, anxiety, and **dementia** (mental deterioration, also known as **organic brain syndrome.** Poor nutrition,

inadequate sleep, metabolic problems, and strokes may cause dementia, which affects 4 percent of those over age 65. (Dementia due to strokes is sometimes termed **multi‑infarct dementia.**) Older adults with dementia experience forgetfulness, confusion, and personality changes. Many people use the term **senility** to refer to dementia, which is incorrect. Senility does not have a precise or actual medical meaning; it is an overused and nonspecific term, like the word neurosis.

Similar in symptoms to dementia is **Alzheimer's disease,** an irreversible degenerative brain disorder that can affect as many as 50 percent of older adults over age 85 and eventually results in death. Early symptoms of Alzheimer's disease include agitation, confusion, difficulty concentrating, loss of memory and orientation, and trouble speaking. Later symptoms include the inability to use or understand language, and total loss of control over bodily functions. Unfortunately, Alzheimer's is still a mystery to doctors and other scientists. In fact, the only certain diagnostic procedure for Alzheimer's disease is the analysis of autopsied brain tissue. The exact causes of Alzheimer's disease continue to elude researchers, although some suspect that genetics and malfunctions in enzyme activity may play a role.

The Stages of Dying and Death

At the end of the human life span, people face the issues of dying and **death** (the permanent cessation of all life functions). North American society in recent years has witnessed an increased interest in the **thanatology,** or the study of death and dying. **Thanatologists** examine all aspects of death, including biological (the cessation of physiological processes), psychological (cognitive, emotional, and behavioral responses), and social (historical, cultural, and legal issues).

Perhaps the best‑known pioneer in Thanatology is Elisabeth Kubler‑Ross, who after interviewing 200 terminally ill people proposed five stages of coming to terms with death. Upon learning of their own impending death, dying people's first reaction is often **denial,** in which they refuse to acknowledge the inevitable, perhaps believing a mistake has been made. They may seek other medical opinions and diagnoses or pretend that the situation will simply go away on its own. Gradually, as they realize that they are going to die, the terminally ill experience **anger** at having their lives end prematurely. They may

become envious and resentful of those who will continue on, especially if they feel that their own life plans and dreams will go unfulfilled. Individuals who are dying will then attempt to **bargain,** often with God or another religious figure, and will promise to change or make amends or atone for their wrong doings. When bargaining fails, they experience **depression** and hopelessness. During this stage, the terminally ill may mourn the loss of health that has already occurred, as well as the impending losses of family and plans. Finally, those dying learn to **accept** the inevitable, paving the way for a smoother transition both for themselves and loved ones.

Kubler‐Ross pointed out that although the above five stages are typical, they are not absolute. Not all people progress predictably through all the stages, nor do people experience the stages in one particular order. Additionally, these stages do not necessarily represent the healthiest pattern for all individuals under all circumstances. Kubler‐Ross and others also have noted that people whose loved ones are dying may progress through the same five stages as the dying person.

An individual who is not facing an immediate death has more time to adjust to the idea. In fact, dying can be a time of increased personal growth. The **life review,** or process of reminiscing, can help people examine the significance of their lives and prepare for death by making changes and finishing uncompleted tasks. Many dying individuals report that they are finally able to sort out who and what is the most important to them and are able to enjoy to the fullest what time remains. Many also report that dying is a time of religious awakening and transcendence.

Following the death of a loved one, survivors normally experience **bereavement,** or a change in status, as in the case of a spouse becoming a widow or widower. The behavioral response of the bereaved person is termed **mourning;** the emotional response that is termed as **grief.** People vary in their patterns of mourning and grief, both within and across cultures. People may also experience **anticipatory grief,** or feelings of loss and guilt, while the dying person is still alive.

Grieving typically begins with shock or disbelief, and is quickly followed by intense and frequent memories of the dead person. When those who are grieving finally attain resolution, or acceptance of the person's

passing, they resume everyday activities and are able to move on with their lives.

People grieve in considerably different ways. Some adults are very vocal in their expressions of grief, while others prefer to be alone to quietly gather their thoughts and reflect on the loss of the loved one. Of course, cultural groups around the world handle grief according to their own customs. Egyptian mourners, for example, may cry loudly in public as a sign of grief, while Japanese mourners may talk quietly to the deceased person while kneeling in front of a home altar.

Dealing with Dying and Death

A variety of options are available for individuals seeking to cope with dying and death. **Grief therapy** counseling, and support groups can help individuals deal with their grief and bereavement. **Hospice,** which can occur at home or in a hospital or other institution, can provide care for dying persons and their families. Hospices are designed for terminally ill patients to live out their remaining days as independently, fully, and affordably as possible. **Death education** can also help by providing people with information on dying, legal issues, and various practical matters. Classes on death and dying are available at colleges, hospitals, and community centers. Many people take comfort in **Bibliotherapy,** or reading books about dying, perhaps explaining the popularity of the life‐after‐life books. These testimonials detail the alleged journeys of people who were clinically dead into the afterlife before they were resuscitated.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

4. What is the age of early childhood?

……

……

5. Adolescence – Explain?

……

……

6. What is the study of old age called?

……

……

UNIT 4 NATURE vs NURTURE

Nature and Nurture have significant role in human development. Nature due to heredity and nurture is due to the environment. Both heredity and environment have special significance in the field of education.

OBJECTIVES

After going through this unit, you will be able to:

- Comprehend the contribution of heredity and the environment for human development.
- Compare the influence of nature and nurture on human development.

Nature and Nurture

The Nature and Nurture are terms as heredity and environment. Two views are prevailing among the psychologists with regard to the growth and development of an individual namely heredity and environment. Some people argue that a person's heredity decides his growth and development, and others argue that it is environment which decides the individual's pattern of growth and development.

Meaning of Heredity (Nature)

Heredity is the process by which characteristics of a individual are basically determined by genes received from the parents.

- Dougal and Holland define, "One's heredity consists of all the structures, physical, characteristics, functions or capacities derived from parents, other ancestry of species."
- Woodworth defines, "Heredity covers all the factors that are present in the individual when he begins life not at birth, but at the time of conception about nine months before birth."

Meaning of Environment (Nurture)

Environment is the process by which characteristics of an individual are determined by his/her surrounding and circumstances. The forces of environment begin to play their part and influence and the development of the individual, right from the time of fertilization of the ovum by sperm.

Therefore, from the environmental point of view, not of the mother after conception has equal significance.

- Boring, Langfield and Weld define, “The environment is everything that affects the individual except his genes.”
- Douglas and Holland define, “Environment as a word which describes, in the aggregate, all extrinsic forces of influences and conditions which affect the life, nature, behaviour and the growth, development and maturation of living organism.”
- Woodworth and Marquis define, “Environment covers all the outside factors that have acted on the individual since he began his life.”

Differences between Heredity and Environment

The following table explains the differences between heredity and environment.

Table 1.3 Differences between Heredity and Environment

Heredity	**Environment**
Innate of inborn	Acquired
Genetic constitution	Environment constitution
Body constitution	Mental constitution
Physical traits	Psychological traits
Biological in nature	Psychological in nature
Heredity fixed the traits during conception	Environment fixed the traits after birth
Only limited role	Wider role
Causing similarities or identifies between parents and children in their physical and mental make up	Causing differences between parents and children on their physical and mental make up
Heredity cannot be changed	Environment can be changed

Studies on Heredity and Environment

Several researches have been conducted research on heredity to support that the heredity is the main cause for the formation of behaviour and character.

- Douglas did a study on Juke's family. Juke was a fisherman who was a corrupt. About 1000 persons were born of five generation out which 300 died during infancy, 310 were orphans, 130 were criminals and rest 120 was normal. Thus, the family inherited certain physical and mental traits from generation to generation which were responsible for their antisocial activities.
- Goddard studied Kallikak'sfamily, Kallikakwas a soldier who married two women-one was feeble minded and another was an intelligent girl. Of 480 individuals described from the feeble minded woman, 434 were mostly feeble- minded, criminals, sexual perverts and drunkards. From their descendents of the intelligent girl, 486 out of 496 individuals were talented. Thus, this study supports the heredity factors.
- Sir Francis Galton conducted a study on family histories of 977 persons. Of 977 eminent men, 536 were found to have closed blood relationship and were famous. On the other hand study on 977 common persons, only 4 near relatives were famous.

Studies on Environment

The following studies support environment as the main cause for formation of behaviour and character:

- **Scottish Survey:** Deceuo's studies show that environment changes brought about changes in the IQ of children. "The most celebrated of these studies are the Scottish surveys of 1932 and 1947, as reported by the Scottish Council for Research in Education. In 1932, intelligence tests were administrated to 87,498 Scottish children of the same age. The average score showed a small but significant improvement over the fifteen year period."
- **Study of Fly and Edith:** These two identical female twins were separated in childhood. One of them was married to a business man and the other to a farmer. In the behaviour. IQ and many other psychological areas, there were lots of differences between the two in the later part of their life.

- **Study of James and Reece:** These two twins were related in a hill and a village respectively. When their intelligence was marked the difference of 19 point was found. This indicates the intelligence of environment.
- **Study of Wolf children:** In the early nineteen twenties some hunters found two children from a cave of wolves in a jungle. One of them was about eleven year and the other about seven year old. It seemed as of the children had been carried away one by one by the female wolf when they were young babies and instead of being eaten up, they were reared up in the cave. The social environment turned them into wild beasts. They howled and crawled like beasts, they could not stand erect. Their limbs were crooked. Bur they could crawl very swiftly just like wolves. Their jaws had been deformed and disfigured. They ate raw meat and felt restless in the presence of men. They sipped water. They were taken to a hospital. After some days a priest took them home. He made great efforts to reclaim them. He taught them how to eat and drink. He trained them in wearing clothes. At first they resisted but after some months began to wear cloths. He trained them how to walk erect and he succeeded soon. Meanwhile the younger child died. But the behaviour of the elder one was modified and he looked like a human being. The environmentalist says that it was purely environment which brought them back to human form and behaviour.
-

Check your progress

Notes: a. Write your answer in the space given below.
b. Compare your answer with the one given at the end of the unit.

7. What is Woodworth's definition of heredity?
……
……

8. What is the environment/nurture?
……
……

9. Give any four differences between heredity and environment.
……
……
……

UNIT 5 DOMAINS OF DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Describe the major domains of human development.
- Comprehend the interrelation of the domains of human development.

There are five dimensions of human development. They are as follows:

Physical Development

Physical growth refers to a process which begins about bodily and psychological changes internal as well as external in an organism from the conception till his death General pattern of physical growth: (i) Increase in height and weight& (ii) Changes in body proportions.

A new born baby has a body length of 16 to 18 inches and weight 6 to 8 pounds. Boys weight more than girls. Generally, growth is rapid and the head increased disproportionately in size. Weight increased by hundred percent in the first six months and up to five years an average of four inches per year in the first 4 year. At the age of 5 a child will be about 35” to 40” tall and weigh 30 to 35 pounds. Of course girls will be shorter and lighter. At the age of 3, the lungs and heart grow in size; bigger muscles develop faster and cannot be found below 3 year of age.

In later childhood, the rate of physical growth is slow and steady. Children between 6 and 12 years put on 3 to 4 pounds. The increase in height between 9 to 12 years is only one inch per year. The lengthening of the limb is the significant physical change during this phase. The legs grow very fast. Postural defects are likely to appear at this stage. The heart and lungs reach almost growth. Muscular development and co-ordination improve and by the age of six a child has a considerable mastery over the basic skills. But the eye muscles reach full growth only by nine years. Therefore children should not be given long reading session’s upto this age. By twelve years of age the muscular coordination is almost perfect and the child may improve in handwriting, manipulatory skill and so on.

In adolescence physical growth is remarkably rapid and bodily changes occur in a fantastic way. Children rapidly grow out of their clothes, a problem for parents. The endocrine glands become very active and secondary sexual characteristics become pronounce. Boys reach the masculine stature. The voice breaks and becomes hoarse. Between 12 and 14 girls may grow faster than boys. Boys grow faster from 14. Boys develop big muscles and need hard physical work; girls reach puberty and experience a rounding of the figure unique to women. Because the rate of growth at this period is too much, muscular coordination is very poor. Adolescents, as a rule, are clumsy and awkward in their words there is no worse nuisance than a boy at the age of 14. He is neither ornamental nor useful. Then he is at the unattractive growing age. He grows out of his clothes with indecent haste, his voice grows hoarse and breaks quavers, and his face grows suddenly angular and unsightly.

Cognitive Development

Trying to teach a child that which is actual, too advanced or too difficult for him does not result in a better educated child. In fact it is likely to harm him emotionally. One of the indexes to growth of intelligence is to the point of in vocabulary, which has of two phases, words used and words correctly recognized. Increase in vocabulary in general is characteristics of mental growth and reaches its high point in the twenties although it is possible that vocabulary ability increases slightly throughout most of adult life. Another index to the development of intelligence is the development of thinking through the stages of enumeration, description and interpretation. The teacher should be conscious of these stages and in teaching should try to stimulate to indicate increasing powers of perception, memory, imagination and reasoning or problem solving. A person has mental ability of learning readiness for tasks when he has grown and developed to a level where he has the potential and the capacity to learn these tasks readily. Generally mental growth is most rapid in to first 5 years of life, nearly as rapid from ages 5 to 10, less so from 10 to 15 and much less so from 15 to 20. Natural mental growth probably stops at about the age of twenty. Bright children develop much faster than dull children and reach a much higher level at maturity. The bright children probably develop over a little longer period that than the dull.

Vocabulary development depends on environment. A happy home and nursery school condition may be helpful in the proper mental

development during this period. In later childhood, mentally a child a six year of age is ready to go to school. Its brain has reached 80% of its total development. A child at 6 can form simple concepts and the child evinces a keen interest in reading and writing. But it cannot attend to any one thing for a considerable time. Therefore long reading and writing sessions have to be avoided. But the ability to read and write improves by 9 to 12 years. It is the period when children are eager to learn and consequently pleasurable learning experiences have to be provided to sustain the motivation. It is the period when the children's horizon of interest widens and their curiosity reaches maximum development. They like to explore and find out for themselves the nature of things. Children between 6 and 7 years of age indulge in make – believe cocepts. They become realistic between 9 and 12 years of age. Between 6 and 7 year of age, a child's self – concept does not appear and it identifies itself with its superiors. By 12 years a child is able to express clearly its feeling and experiences.

Adolescence is a period of rapid mental development. Ability to form concepts matures. He is able to generalize his experiences. Abstract concept are formed and understood. Numerical ability reaches significant growth. The adolescence is capable of doing abstract reasoning. Consequently he likes debates and discussions and cannot take anything for granted. Therefore he is seen to argue with elders, a tendency that may be labeled" impertinence and impudence." The vague and diffused interest of childhood gets distilled into concentrated and specific interest during adolescence. Boys like to read stories of privation and adventures and girls read stories of home life, love and beauty. An interest in fine – arts is common in many adolescents and so also in sport and games. Many adolescents are day – dreamers. Normal and occasional day dreaming is essential to let out pent up emotions. But if it amounts to "withdrawal" it becomes dangerous.

Emotional Development

Emotions are complex and diffuse mental experience involving body and mind. To become emotional means to get excited, activated and stirred up. According to J.B. Waston, the primal emotions in babies are three: Anger, fear, and love. According to Bridges, the only emotional reaction of a neonate is generalized excitement. By 3 months the excitement changes into Distress and Delight. By 6 months "distress" partly splits into specific emotions fear, disgust and anger. By 13 months 'delight'

partly gives rise to elation and affection. By 18 month ‘distress’ further gives rise to jealousy and affection becomes specific as affection for adult and affection for children. By 24 months, in addition to the above, fear, disgust, anger, jealousy, distress, excitement, delight, relation, affection for adult, affection for children and ‘joy’ emerges out of ‘delight’. Up to the age of one year, all emotions are connected with the infant’s basic biological needs. When the infant’s movements are restricted it becomes angry. Love is happiness for the infant. It likes to be fondled. By 4 or 5 years, the child acquires many emotions as a result of its interaction with people and matter.

A liking for group life appears at the age of 6. It is the gregarious instinct that paves way for the socialization for the child. The child learns to control its primal emotions. As the instincts of curiosity, construction and acquisition develop during 6-12 years of ages the accompanying emotions are also seen. The instinct of self-abasement may lead to an unconditional surrender to parents and teachers, made possible by the mechanism of identification. In general this period is one of consolidation and children do not experience any emotional calamity that would be normally experienced during adolescence.

Adolescence marks a period of emotional instability and imbalance. A sudden change from great elation to total dejection may be seen in adolescent behaviour. The self from great elation to total dejection may be seen in adolescent behaviour. The self-assertive instinct and the sex instinct reach maximum development. Adolescence craves for recognition and love. They want to be consulted if their opinions are not taken into account in deciding policies either at home or at school. The gregarious instinct fully develops and peer group influence on them becomes great. The altruistic impulse becomes dominant. The period of early adolescence (13-15) is more troublesome than late adolescence (16-19).

“In the world there is no worse nuisance than a boy at the age of fourteen… If he talks with childish lips he is called a baby and if in a grown – up he is called impertinent. In fact, talk at any kind he is resented. He becomes painfully self-conscious, and when he talks with elderly people he is either unduly forward or else so unduly shy that he appears ashamed of his existence. He becomes the devoted slave of anyone who shows him consideration. While it is the height of bliss to receive the kind looks of women and never suffer their slight” (Tagore).

Social Development

Social growth helps in improving one's personal relationship in learning and how on gets along with people successful. Physical and mental growth contributes social development which is giving a person more capacity for dealing effectively with social situations. Physical and mental weaknesses and defects tend to maladjusted a person. A child is very individualistic in early childhood, but living with people socializes him so that he evolves from extreme individualism to being a socialized person Leadership is an evidence of social maturity. Students who are school leaders tend to be characterized by better scholarship, higher intelligence, more attractive physique, good word habits, success extracurricular activities and higher socio-economic status. Home and school environment can make a child feel frustrated, resentful over dependent, inferior and insecure in many ways or the opposite. In school children are accepted or rejected by other. Socio- metric methods may be used to determine the social acceptance and rejection of children within a group or class.

Persons are socially mature who can make friends, who are leaders, who have good emotional control, who cooperate with others, who become economically and social independent, who have wholesome and recreational interests, who maintain high moral standards, who have good member and who get along with member of the opposite sex.

A neonate is no better than an animal, in being totally self-centered. It wants its biological needs to be satisfied. Its mother is the first human being who moves closely within it and by 3 months the baby begins to have a linking for its mother. Then as it grows it learns to smile at familiar persons and cry at the sight of strangers. By 3 years of age the child is selfish to the extent that it wants to play alone and never gives anything to others. By the age of 3 or 5, children may play with other children, but they may quarrel suddenly and part. Home environment at this period decides socialization. The treatment given to them by the members of the family decides their social nature. Only child is likely to become ego-centric.

Later childhood is the period when children become less self-centered. School life usually commences at 6 and school is a potent socializing agency. The child gets injured to the unavoidable rubs and uncertain

receptions it may get in later life. In a classroom it cannot have its own way. There are other children and teachers too. It learns to adjust gang spirit and blossoms at 6 years of age. The child learns to obey commands. It is a time when friendships are made. They depend on their parents and craves for peer approval.

The tendency to be in a peer group, which originated during later childhood, becomes pronounced during adolescence. Though boys and girls continue to be in the same group, interest in the opposite sex grows steadily. Some adolescents show withdrawal mechanism which is a definite symptom of maladjustment and abnormally. Adolescents want to be recognized as an adult. The adolescents' craving for recognition and independence are very great. They like to be economically independent. Conflicts with adults, especially parent and teachers are quite common. This is a period when enduring friendships are formed.

Moral Development

The term moral is derived from the Latin word 'mores' meaning manners, customs and folk ways. Morally is indissolubly linked with the social system. The child has to learn what is good and what is bad, what is right and what is wrong. He also has to learn his duty. All these terms clearly shows that moral value has reference to social relationship and social process. According to Piaget, there are four stages:

- **Anomy**: Piaget called the first stage 'anomy,' the stage without the law. At this stage the behaviour of the child is neither moral nor immoral but non-moral or a moral. His behaviour is not guided by moral standards. The regulators of behaviour are pain and pleasure. This is the "discipline of natural consequences " as advocated by Rousseau
- **Heteronomy**: Discipline of Authority- The second stage of moral development may be called the discipline of artificial consequences imposed by adult. Moral development at this stage is controlled by external authority. Rewards and punishments regulate moral development.
- **Heteronomy**: Discipline of Reciprocity- At the third stage, there is the morality of cooperation with peers of equals. This stage is regulated by reciprocity which implies, "we should not do to others

what will be offensive to us Conformity with the group become imperative.

- **Autonomy**: Adolescence Piaget calls this stage equity stage also. The individual at this stage is fully responsible for his behaviour. The rules governing moral behaviour come from come from within the individual. Such autonomy is the ideal of moral development.

Check your progress

Notes: a. Write your answer in the space given below.
b. Compare your answer with the one given at the end of the unit.

10. What are the five dimensions of human development?
……
……

LET US SUM UP

Human development is a process that continues throughout our lives. This unit has taken a look at the progression of human development from infancy to late adulthood with all the stages in between.

The pre-natal stage is the period from conception till birth. This period is divided into three sub- stages. They are the period of ovum, period of embryo and the period of foetus. The post natal life begins at birth and ends at death. The phases of post-natal period are infancy, early and late childhood, adolescence, adulthood and old age.

Infancy is the period from 0-2 years. The early childhood period is between 3-6 years, which is a remarkable period of physical and psychological developments. The stage of late childhood starts from the 7th year and goes on till the 12th year.

Adolescent period follows late childhood and extends from the age of thirteen to nineteen. Adulthood is the longest period of the life span ranging from 20-60 years. Old age is considered as the final stage of the normal life span that usually begins at the age of sixty.

Growth refers to quantitative increase in size and structure of the body, whereas development refers to qualitative and quantitative changes. Human development is governed by certain principles. Knowledge of the principles of growth and development helps us to understand children better.

Human development constitutes the development of different areas such as physical, motor, language and speech, emotional, social and cognitive developments. Heredity is a biological process through which the transmission of physical and social characteristics takes place from parents to off springs.

Environment refers to all the factors except heredity, affecting an organism starting from the moment of conception. Sex, nutrition, gland of internal secretion, position in the family, maturation and learning, physical defects and emotional factors are the specific factors affecting growth and development.

GLOSSARIES

Adolescence: transitional phase of growth and development between childhood and adulthood.

Cognition: term referring to the mental processes involved in gaining knowledge and comprehension.

Development: the process of growing to maturity.

Maturation: The process of being mature; the emergence of individual and behavioral characteristics through growth processes over time.

Nature (Heredity): The genetic heritage passed down by our biological parents.

Nurture (Environment): The surroundings or conditions in which a person, animal, or plant lives or operates.

Puberty: the time in life when a boy or girl becomes sexually mature.

ANSWERS TO CHECK YOUR PROGRESS

1. Pure and applied psychology.

2. Growth refers to quantitative change leading to the goal of maturity. Crow and Crow defined that growth refers to structural and psychological changes while development refers to growth as well as changes in behaviour.

3. Principle of predictability: According to this principle, growth and development is predictable. Rate of growth and development of each child gives scope to predict the future development, either physically or mentally or emotionally or sociably.

4. Ages 3 through 6 are the early childhood years, or preschool years.

5. Adolescence—the transition period between childhood and adulthood—encompasses ages 12 to 19. It is a time of tremendous change and discovery. During these years, physical, emotional, and intellectual growth occurs at a dizzying speed, challenging the teenager to adjust to a new body, social identity, and expanding world view.
6. Gerontology.
7. Woodworth defines, “Heredity covers all the factors that are parent in the individual when he begins life not at birth, but at the time of conception about nine months before birth.”
8. Environment is the process by which characteristics of an individual are determined by his/her surrounding and circumstances.
9.

Heredity	**Environment**
Innate of inborn	Acquired
Genetic constitution	Environment constitution
Body constitution	Mental constitution
Physical traits	Psychological traits

10. There are five dimensions of human development. They are Physical Development, Cognitive Development, Emotional Development, Social Development and Moral Development.

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BLOCK 2 THEORETICAL APPROACHES TO DEVELOPMENT

Structure

INTRODUCTION

Development is the series of age-related changes that happen over the course of a life span. Developmental theories offer explanations about how we develop, why we change over time and the kinds of influences that impact development. A stage is a period in development in which people exhibit typical behavior patterns and establishes particular capacities. In this unit, we will discuss about the theories of several famous psychologists on development, including Jean Piaget, Vygotsky, Erik Erikson, Sigmund Freud, Bronfenbrenner and Rudolf Steiner.

OBJECTIVES

After going through this unit, you will be able to:

- explain various stages Piaget's cognitive development
- list the various important characteristics of Piaget's cognitive development
- explicate Vygotsky's socio-cultural theory
- elucidate Erikson's theory of psychosocial development
- discuss about psychoanalytic theory
- comprehend the ecological theory
- grasp the various stages of humanistic theory

UNIT 6 COGNITIVE AND SOCIAL-COGNITIVE THEORIES

OBJECTIVES

After going through this unit, you will be able to:

- Explain cognitive theories of human development.
- Describe social-cognitive theories of human development.

6.1 Piaget's Cognitive Theory

Jean Piaget (1896-1980), a Swiss child psychologist, offers a rich framework for conceptualising the development of child's thinking and cognition through development to an adult. To him cognitive development means how knowledge is acquired and developed through successive stages and at various age levels. Hence, his theory of cognition is sometimes called genetic epistemology. It focuses attention on the interaction between his biological inheritance and his environment for cognitive development.

Cognitive Process

In Piaget's theory, all cognition takes place due to three processes: assimilation, accommodation and equilibration.

- **Assimilation** means the fitting of new information into previously established cognitive structures (schemas).
- **Accommodation** is the alteration of existing cognitive structures (schemas) in response to new information.
- **Equilibration** means optimal level of intellectual functioning taking place when there is a balance between assimilation and accommodation.

  The cognitive structure changes from one stage to another by the process of equilibrium, maintaining between the child and his changing environment.

These three processes together facilitate adaptation. Adaptation is an ongoing process which helps the individual internalise or store in all that one comprehends. All learning is adaptive as an infant learns to cry when hungry.

Stages of Cognitive Development

Piaget (1970) suggested that children throughout the world proceed through a series of four stages in a fixed order. Piaget's four distinct cognitive development stages are:

1. Sensorimotor stage (Birth to 2 years)
2. Pre-operational stage (2 to 7 years)
3. Concrete Operational stage (7 to 12 years)
4. Formal Operational stage (12 years to adulthood)

1. Sensorimotor stage (Birth to 2 years)

According to Piaget, the sensorimotor stage is from birth to two years, during which a child has little competence in representing the environment using images, language or other symbols. In the first two years, infants learn about their world primarily through their senses and actions. Instead of thinking about what is going on around them, infants discover by sensing (sensory) and doing (motor). The major accomplishments of the period are the following:

a) Coordination of reflexes: During the first 4 months the uncoordinated reflexes, which are present at birth, are coordinated into simple schemas.

b) Object causality: Infants gradually learn that there is a relationship between their actions and the external world (objected causality). They discover that they can manipulate objects and produce effects.

c) Object permanence: A newborn baby does not realize that objects are permanent. For infants below eight month old, what is out of sight is purely out of mind. Gradually, by the age of 8 months, the infant develops the concept of object permanence, an understanding that objects continue to exist even when they are not immediately in view.

d) Imitation: Infants may try to imitate the actions or facial expressions of an older person.

2. Pre-operational Stage (2 to 7 years)

According to Piaget, the pre-operational stage is a period from 2to 7 years of age which is characterized by language development. During this stage, the child acquires the ability to form mental images of objects

and events. Thus begins to think symbolically. This stage is further subdivided into two: A, the pre-conceptual phase (2 to 4 years) & B, the intuitive phase (4 to 7 years)

A. The pre-conceptual phase (2 to 4 years): This is the period of rudimentary concept formation. During this period, the child develops the ability to identify and classify objects. The other features are as follows:

a) **Representational thought:** the child develops the ability to form mental symbols to represent objects or events that are not present. The symbolic function of cognitive development can be seen in differed imitation and symbolic play.

   i. **Differed imitation:** The child shows the ability to imitate action performed earlier by adults.

   ii. **Symbolic play:** The child demonstrates make-believe play in which he uses signs and symbols in place of real objects.

b) **Transductive reasoning:** the mode of reasoning of the child at this stage is transductive in nature, that is, he reasons from the particular to the particular.

c) **Ego centrism:** the child at pre-conceptual phase cannot think beyond his own view. He tends to assume that others see the world just as he himself sees it.

d) **Animistic-Thinking:** Pre-operational children display animistic thinking. Children attribute human feelings and motives to non-living objects. Thus, a three year old might state that thunder occurs because the clouds are angry and Mother Nature brings rain.

B. The intuitive phase (4 to 7 years)

During this period, the cognitive behaviour of the child is still controlled by perception. His reasoning is based on intuitive rather than on systematic logic. But, he is able to use concepts as stable generalization of his past and present experiences. The child in the intuitive sub-stage lacks understanding of relational terms and ability to serialize objects. His logic is limited with irreversibility and his thinking is marked by an inability to conserve in terms of quantity as well as number.

3. Concrete Operational Stage (7 to 12 years)

According to Piaget, the concrete operational period is from age 7 to 12 years, which is characterized by logical thinking and loss of egocentrism.

The child's thought process is limited to real events observed or the actual objects operated by him. The important features of this stage are:

a. **Inductive-deductive reasoning:** The child begins to think in terms of a set of interrelated principles rather than single bits of knowledge. He can now make use of inductive and deductive approaches in terms of reasoning and arriving at conclusions.

b. **Flexibility in thinking:** The child sheds his egocentrism and he is able to take the viewpoints of others.

c. **Understanding the principles of conservation:** The child develops the ability to conserve both in terms of quantity and number of objects. He can now very well think that the change is appearance of an object does not alter either its quality or its number.

d. **Classification and serialization:** The child develops the ability to classify objects. He develops the understanding of relational terms and also the ability of serialization.

e. **Reversibility of thought:** At this stage the child learns to carry a thought backward and forward in time.

4. Formal Operational Stage (12 years to adulthood)

According to Piaget, the formal operational period is from age 12 to adulthood, which is characterized by abstract thinking. At this stage, the child's thought process becomes quite systematic and reasonably well integrated. The following are the important features of this period.

a. **Abstract thinking:** The child develops abstract thinking. He uses symbolism in the process of thought and learns to deal with abstraction by logical thinking.

b. **Hypothetical reasoning:** Systematic assumption of possible solutions (hypotheses) is derived by the child for the problem. Then the child tests these hypotheses to see which one is the correct solution for the problem.

c. **Problem- solving:** The individual follows the systematic approach in solving the problems. He formulates multiple hypotheses and a number of alternative solutions.

d. **Transfer of knowledge:** The individual is able to transfer his learnt knowledge from one situation to another.

Table 2.1 Piaget's Stages and its Major Characteristics

Stage	**Age**	**Major Characteristics**
Sensorimotor	Birth-2 years	Development of object permanence, development of motor skills, little or no capacity for symbolic representation.
Pre-Operational	2-7 years	Development of language and symbolic thinking, egocentric thinking
Concrete Operational	7-12 years	Development of conservation, mastery of concept reversibility
Formal Operational	12-adulthood	Development of logical and abstract thinking

6.2 Vygotsky's Socio-cultural Theory

Lev Semenovich Vygotsky, a Russian psychologist who lived during the Russian Revolution, developed a theory of development known as the Sociocultural Theory of Cognitive Development in the early twentieth century.

As a proponent of the socio-cultural perspective to development, Vygotsky's socio-cultural theory gained worldwide recognition. It began to exert influence when his work was finally translated into English in 1962 and the importance of both socio-cultural perspective of development and cross-cultural research was recognized.

Vygotsky's main assertion was that children are entrenched in different socio-cultural contexts and their cognitive development is advanced through social interaction with more skilled individuals. The Vygotsky theory of cognitive development is mainly concerned with the more complex cognitive activities of children that are governed and influenced by several principles. Believing that children construct knowledge actively, Vygotsky's theory is also one of those responsible for laying the groundwork for constructivism.

Zone of Proximal Development

Vygotsky is most recognized for his concept of Zone of Proximal Development or ZPD pertaining to the learning of children. Children who are in the zone of proximal development for a specific task can almost perform the task independently, but not quite there yet. However, with an appropriate amount of assistance, these children can accomplish the task successfully.

The lower limit of a child's zone of proximal development is the level of analysis and problem-solving reached by a child without any help. The upper limit, on the other hand, is the level of additional responsibility that a child can receive with the support of a skilled instructor.

As children are verbally given instructions or shown how to perform certain tasks, they organize the new information received in their existing mental schemas in order to assist them in the ultimate goal of performing the task independently. This emphasis on the concept of Zone of Proximal Development made by Vygotsky underscores his conviction that social influences, particularly instruction, are of immense importance on the cognitive development of children.

More Knowledgeable Other

Children are entrenched in a socio-cultural backdrop (e.g. at home) in which social interaction with significant adults, such as the parents, plays a crucial factor that affects their learning. These adults need to direct and organize the learning experiences to ensure that the children can master and internalize the learning.

According to the Vygotsky theory, any person who possesses a higher skill level than the learner with regard to a particular task or concept is called a More Knowledgeable Other or MKO. This person may be a teacher, parent, an older adult, a coach or even a peer.

Scaffolding

Vygotsky's concept of scaffolding is closely related to the concept of the zone of proximal development. Scaffolding refers to the temporary support given to a child by More Knowledgeable Others, usually parents or teachers that enable the child to perform a task until such time that the child can already perform the task independently.

Scaffolding entails changing the quality and quantity of support provided to a child in the course of a teaching session. The more-skilled instructor adjusts the level of guidance needed in order to fit the student's current level of performance. For novel tasks, the instructor may utilize direct instruction. As the child gains more familiarity with the task and becomes more skilled at it, the instructor may then provide less guidance.

Children who experience more difficulty in task performance are in need of greater assistance and guidance from an adult. When the child has learned to complete the task independently, the scaffolds are removed by the adult, as they are no longer needed.

A major contribution of Vygotsky's theory of cognitive development is the acknowledgement of the social component in both cognitive and psychosocial development. Due to his proffered ideas, research attention has been shifted from the individual onto larger interactional units such as parent and child, teacher and child, or brother and sister.

Vygotsky's theory likewise called attention to the variability of cultural realities, stating that the development of children who are in one culture or subculture, such as middle class Asian Americans, may be totally different from children who hail from other societies or subcultures. It would not be fitting, therefore, to utilize the developmental experiences of children from one culture as a norm for children from other cultures.

The Vygotsky theory of cognitive development has significant ramifications in education and cognitive testing. Vygotsky was a strong advocate of non-standard assessment procedures for the assessment of what and how much a child has learned and in the formulation of approaches that could enhance the child's learning. His ideas have effected changes in educational systems through the increased importance given to the active role of students in their own learning process and the encouragement of teacher-student collaboration in a reciprocal learning experience.

Check your progress
Notes: a. Write your answer in the space given below.
b. Compare your answer with the one given at the end of the unit.

1. What are three cognitive processes in Piaget's theory?
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   ……

2. What are Piaget's four distinct cognitive development stages?
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3. Who developed the Sociocultural Theory of Cognitive Development?
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UNIT 7 PSYCHO-SOCIAL THEORY

OBJECTIVES

After going through this unit, you will be able to:

- Explain various stages of psycho-social theory of human development.

Erik Erikson (1902-1994) said that children develop in a predetermined order. Instead of focusing on cognitive development, however, he was interested in how children socialize and how this affects their sense of self. *Erikson's Theory of Psychosocial Development* has eight distinct stages, each with two possible outcomes. According to the theory, successful completion of each stage results in a healthy personality and successful interactions with others. Failure to successfully complete a stage can result in a reduced ability to complete further stages and therefore a more unhealthy personality and sense of self. These stages, however, can be resolved successfully at a later time.

1. **Trust vs. Mistrust**. From birth to 1 year, children begin to learn the ability to trust others based upon the consistency of their caregiver(s). If trust develops successfully, the child gains confidence and security in the world around him and is able to feel secure even when threatened. Unsuccessful completion of this stage can result in an inability to trust, and therefore a sense of fear about

the inconsistent world. It may result in anxiety, heightened insecurities, and an over feeling of mistrust in the world around them.

2. **Autonomy vs. Shame and Doubt**. Between the ages of 1 and 3, children begin to assert their independence, by walking away from their mother, picking up a toy to play with, and making choices about what they like to wear, to eat, etc. If children in this stage are encouraged and supported in their increased independence, they become more confident and secure in their own ability to survive in the world. If children are criticized, overly controlled, or not given the opportunity to assert themselves, they begin to feel inadequate in their ability to survive, and may then become overly dependent upon others, lack self-esteem, and feel a sense of shame or doubt in their own abilities.

3. **Initiative vs. Guilt**. Around age 3 and continuing to age 6, children assert themselves more frequently. They begin to plan activities, make up games, and initiate activities with others. If given this opportunity, children develop a sense of initiative, and feel secure in their ability to lead others and make decisions. Conversely, if this tendency is squelched (crushed), either through criticism or control, children develop a sense of guilt. They may feel like a nuisance to others and will therefore remain followers, lacking in self-initiative.

4. **Industry vs. Inferiority**. From age 6 years to puberty (6-13), children begin to develop a sense of pride in their accomplishments. They initiate projects, see them through to completion, and feel good about what they have achieved. During this time, teachers play an increased role in the child's development. If children are encouraged and reinforced for their initiative, they begin to feel industrious (characterized by hard work and perseverance) and feel confident in their ability to achieve goals. If this initiative is not encouraged, if it is restricted by parents or teacher, then the child begins to feel inferior, doubting his own abilities and therefore may not reach his potential.

5. **Identity vs. Role Confusion**. During adolescence (13-19), the transition from childhood to adulthood is most important. Children are becoming more independent, and begin to look at the future in terms of career, relationships, families, housing, etc. During this period, they explore possibilities and begin to form their own identity based upon the outcome of their explorations. This sense of who they are can be hindered (prevented), which results in a sense of confusion ("I don't know what I want to be when I grow up") about themselves and their role in the world.

6. **Intimacy vs. Isolation**. This may occur in young adulthood (19-35), we begin to share ourselves more intimately with others. We explore relationships leading toward longer term commitments with someone other than a family member. Successful completion can lead to comfortable relationships and a sense of commitment, safety, and care within a relationship. Avoiding intimacy, fearing commitment and relationships can lead to isolation, loneliness, and sometimes depression.
7. **Generativity vs. Stagnation**. During middle adulthood (35-55), we establish our careers, settle down within a relationship, begin our own families and develop a sense of being a part of the bigger picture. We give back to society through raising our children, being productive at work, and becoming involved in community activities and organizations. By failing to achieve these objectives, we become stagnant and feel unproductive.
8. **Ego Integrity vs. Despair**. As we grow older and become senior citizens (55-death), we tend to slow down our productivity, and explore life as a retired person. It is during this time that we contemplate (reflect) our accomplishments and are able to develop integrity if we see ourselves as leading a successful life. If we see our lives as unproductive, feel guilt about our pasts, or feel that we did not accomplish our life goals, we become dissatisfied with life and develop despair, often leading to depression and hopelessness.

Table 1.6 Erickson's Stages and its Important Events

Stage	**Basic Conflict**	**Important Events**	**Outcome**
Infancy (birth to 18 months)	Trust vs. Mistrust	Feeding	Children develop a sense of trust when caregivers provide reliability, care, and affection. A lack of this will lead to mistrust.
Early Childhood (2 to 3 years)	Autonomy vs. Shame and Doubt	Toilet Training	Children need to develop a sense of personal control over physical skills and a sense of independence. Success leads to

Stage	Basic Conflict	Important Events	Outcome
			feelings of autonomy, failure results in feelings of shame and doubt.
Preschool (3 to 5 years)	Initiative vs. Guilt	Exploration	Children need to begin asserting control and power over the environment. Success in this stage leads to a sense of purpose. Children who try to exert too much power experience disapproval, resulting in a sense of guilt.
School Age (6 to 11 years)	Industry vs. Inferiority	School	Children need to cope with new social and academic demands. Success leads to a sense of competence, while failure results in feelings of inferiority.
Adolescence (12 to 18 years)	Identity vs. Role Confusion	Social Relationships	Teens need to develop a sense of self and personal identity. Success leads to an ability to stay true to yourself, while failure leads to role confusion and a weak sense of self.
Young Adulthood (19 to 40 years)	Intimacy vs. Isolation	Relationships	Young adults need to form intimate, loving relationships with other people. Success leads to strong relationships, while failure results in

Stage	Basic Conflict	Important Events	Outcome
			loneliness and isolation.
Middle Adulthood (40 to 65 years)	Generativity vs. Stagnation	Work and Parenthood	Adults need to create or nurture things that will outlast them, often by having children or creating a positive change that benefits other people. Success leads to feelings of usefulness and accomplishment, while failure results in shallow involvement in the world.
Maturity(65 to death)	Ego Integrity vs. Despair	Reflection on Life	Older adults need to look back on life and feel a sense of fulfillment. Success at this stage leads to feelings of wisdom, while failure results in regret, bitterness, and despair.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

4. How many stages are there in Erikson's Theory of Psychosocial Development?

UNIT 8 PSYCHO-ANALYTICAL THEORY

OBJECTIVES

After going through this unit, you will be able to:

- Discuss the psycho-analytical theory of human development.
- Explain the implications of psycho-analytical theory on adolescence.

Born on May 6, 1856 in Moravia, **Sigmund Freud** was an Austrian neurologist who, in the late 19th and early 20th centuries, developed the field of psychoanalysis. Freud developed many theories including those that focus on the unconscious, the interpretation of dreams, Id, ego, and super ego, and what is referred to as the psychosexual development theory. Psychosexual development is a theory that Freud based upon the Greek tragedy by Sophocles *Oedipus Rex* and is often referred to as the *Oedipus complex.* The *Oedipus complex* teaches that the unconscious holds repressed thoughts that boys have a desire to have sexual intercourse with their mothers, while wanting to murder their father. The theory isn't limited solely to males, as Freud believed that girls have a sexual attraction to their fathers. This was later referred to as the *Electra complex.* Freud taught that these unconscious thinking patterns form during several stages of development until they are eradicated by normal, healthy sexual development. Freud's theory of psychosexual development is divided into five stages. These are oral, anal, phallic, latency, and genital. Freud's theory was an important factor to his teachings based upon the development of the human personality.

1. **Oral Stage**: The oral stage occurs in an infant's life from birth to 18 months. During this time, an infant is focused with receiving oral pleasure. This occurs through breast or bottle feeding, or sucking on a pacifier. It is believed that if an infant receives too much or too little oral stimulation, they may develop a fixation or a personality trait that is fixated on oral gratification. It is believed that these people may focus on activities that involve the mouth such as over eating, biting the fingernails, smoking, or drinking. The theory states that these people may develop personality traits such as becoming extremely gullible or naive, always following others and never taking the lead, and becoming extremely dependent upon others.

2. **Anal Stage**: The anal stage is directly related to a child's awareness of bowel control and gaining pleasure through the act of eliminating or retaining faeces. Freud's theory puts the anal stage between 18 months and three years. It is believed that when a child becomes fixated on receiving pleasure through controlling and eliminating faeces, a child can become obsessed with control, perfection, and cleanliness. This is often referred to as anal retentive, while anal expulsive is the opposite. Those who are anal expulsive may be extremely disorganized, live in chaos, and are known for making messes.

3. **Phallic Stage**: Freud believes the phallic stage or the Oedipus or Electra complexes occurs during a child is three to six years of age. The belief is that male children harbour unconscious, sexual attraction to their mothers, while female children develop a sexual attraction to their father. Freud taught that young boys also deal with feelings of rivalry with their father. These feelings naturally resolve once the child begins to identify with their same sex parent. By identifying with the same sex parent, the child continues with normal, healthy sexual development. If a child becomes fixated during this phase, the result could be sexual deviance or a confused sexual identity.

4. **Latency Stage**: The latency stage is named so because Freud believed there weren't many overt forms of sexual gratification displayed. This stage is said to last from the age of six until a child enters puberty. Most children throughout this age form same sex friendships and play in a manner that is non-sexual. Unconscious sexual desires and thoughts remain repressed.

5. **Genital Stage**: Freud believed that after the unconscious, sexual desires are repressed and remain dormant during the latency stage, they are awakened due to puberty. This stage begins at puberty and develops with the physiology changes brought on through hormones. The prior stages of development result in a focus on the genitals as a source for pleasure and teens develop and explore attractions to the opposite sex. The genital stage is the last stage of the psychosexual development theory.

Check your progrestes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

5. What is Oedipus Complex?

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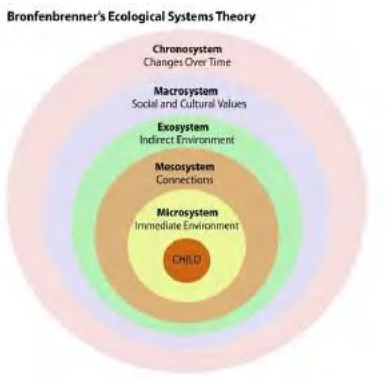
UNIT 9 ECOLOGICAL THEORY

OBJECTIVES

After going through this unit, you will be able to:

- Describe ecological theory of human development.

American psychologist, **Urie Bronfenbrenner**, formulated the Ecological Systems Theory to explain how the inherent qualities of a child and his environment interact to influence how he will grow and develop. Through the Bronfenbrenner Ecological Theory, Bronfenbrenner stressed the importance of studying a child in the context of multiple environments, also known as ecological systems in the attempt to understand his development.



A child typically finds himself simultaneously enmeshed in different ecosystems, from the most intimate home ecological system moving outward to the larger school system and the most expansive system which is society and culture. Each of these systems inevitably interacts with and influences each other in every aspect of the child's life.

The Urie Bronfenbrenner model organizes contexts of development into five levels of external influence. The levels are categorized from the most intimate level to the broadest.

The Bronfenbrenner Model: Microsystem

The **microsystem** is the smallest and most immediate environment in which the child lives. As such, the microsystem comprises the daily home, school or daycare, peer group or community environment of the child.

Interactions within the microsystem typically involve personal relationships with family members, classmates, teachers and caregivers, in which influences go back and forth. How these groups or individuals interact with the child will affect how the child grows. Similarly, how the child reacts to people in his microsystem will also influence how they treat the child in return. More nurturing and more supportive interactions and relationships will understandably foster the child's improved development.

Given two siblings experiencing the same microsystem, however, it is not impossible for the development of the two siblings to progress in different manners. Each child's particular personality traits, such as temperament, which is influenced by unique genetic and biological factors, ultimately have a hand in how he is treated by others.

One of the most significant findings that Urie Bronfenbrenner unearthed in his study of ecological systems is that it is possible for siblings who find themselves within the same ecological system to still experience very different environments.

The Bronfenbrenner Model: Mesosystem

The **mesosystem** encompasses the interaction of the different **Microsystems** which the developing child finds him in. It is, in this essence, a system of microsystems and as such, involves linkages between home and school, between peer group and family, or between family and church.

If a child's parents are actively involved in the friendships of their child, invite friends over to their house and spend time with them, then the child's development is affected positively through harmony and like-mindedness. However, if the child's parents dislike their child's peers and openly criticize them, then the child experiences disequilibrium and conflicting emotions, probably affecting his development negatively.

The Bronfenbrenner Model: Exosystem

The **exosystem** pertains to the linkages that may exist between two or more settings, one of which may not contain the developing child but affects him indirectly nonetheless. Other people and places which the child may not directly interact with but may still have an effect on the child, comprises of the exosystem. Such places and people may include

the parents' workplaces, the larger neighborhood and extended family members.

For example, a father who is continually passed up for promotion by an indifferent boss at the workplace may take it out on his children and mistreat them at home.

The Bronfenbrenner Model: Macrosystem

The **macrosystem** is the largest and most distant collection of people and places to the child that still exercises significant influence on the child. It is composed of the child's cultural patterns and values, specifically the child's dominant beliefs and ideas, as well as political and economic systems. Children in war-torn areas, for example, will experience a different kind of development than children in communities where peace reigns.

The Bronfenbrenner Model: Chronosystem

The **chronosystem** adds the useful dimension of time, which demonstrates the influence of both change and constancy in the child's environment. The chronosystem may thus include a change in family structure, address, parent's employment status, in addition to immense society changes such as economic cycles and wars.

By studying the different systems that simultaneously influence a child, the Bronfenbrenner's Ecological Theory is able to demonstrate the diversity of interrelated influences on the child's development. Awareness of contexts can sensitize us to variations in the way a child may act in different settings.

For example, a child who frequently bullies smaller children at school may portray the role of a terrified victim at home. Due to these variations, adults concerned with the care of a particular child should pay close attention to behavior in different settings or contexts and to the quality and type of connections that exist between these contexts.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

6. What is a microsystem?

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7. Explain - Mesosystem?

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UNIT 10 HOLISTIC THEORY OF DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Explain holistic theory of human development.
- Discuss the influence of holistic theory on childhood and adolescence.

Rudolf Steiner was a pioneer in alternative education. He created a movement that saw individuals as spiritual beings rather than economic fodder or shapes for the society to mould.

According to the Steiner Waldorf Schools Fellowship, 'the priority of the Steiner ethos is to provide an unhurried and creative learning environment where children can find the joy in learning and experience the richness of childhood rather than early specialisation or academic hot-housing.'

Though the works of Steiner are extensive and would require several essays to reflect upon, his writings and talks on the three stages of development a child must pass through to achieve a successful integration of the self, can be the perfect place to start.

In being introduced to these, we might have insight into how Steiner graduates have achieved emotional maturity and a rounded and grounded sense of self, one that is progressive and able to create independent thought and compassionate values in their adult lives.

The Physical: Birth – Age 7

The first stage on the path to 'ethical individualism' is that of the physical where the child, having recently left the ethereal plane, has gently integrated the physical body through ritual, a safe environment and a deep connection with nature.

The child learns through non-self-conscious imitation in a nurturing environment to help them with this; the kindergarten is decorated like a home, kept warm and they are encouraged to help out with physical activities such as chopping vegetables to make their own soup, painting or polishing wood, and simple crafts like finger knitting and sewing.

Rather than being directly ‘taught’, the imagination and thought processes are allowed to develop through song, story and puppet shows of their own accord and pace, discipline delivered through gentle song (basically a telling off told in a loving and forgiving way) and daily work and play outside to keep them grounded and steeped in reality.

The religious element is designed to be much more about ritual and celebrating festivals than enforcing any ideology on the child, and in an ideal environment, to show the child that the world is good and that their every need is met.

The teacher may observe their play and reflect back to them their processes but avoid labeling and practice non-attachment with each child.

Teachers in the Early Years in Steiner education generally do not pick up children, instead taking them on their knee if they’re upset and although the emphasis is put on nurturing the child through their engagement in day-to-day activities and self care, they become highly self sufficient, seeking answers and direction from within rather than the external. The teacher keeps commands and input to a minimum, simply holding the space and being in the background.

The Imagination, Age 7 – 14

Deciding when the time is right to bring a child into slightly more formal classroom settings where they can begin to learn the alphabet and numbers depends on how well formed their character is and is usually dependent on whether they are losing their milk teeth, which is the body’s indication they are ready for the next stage of development.

Children between seven and fourteen will be assigned a class teacher who teaches the majority of subjects to them without becoming a figure of authority in order to upkeep their assertions of self and an autonomy to their learning processes.

As with the early years, the teacher encourages learning through physical movement, poetry and story and becomes a nurturing figure who oversees a class who stays together for many years with abilities mixed together in a familiar setting.

Song and story still play a big role in allowing children to access academic tools to further their educational enquiry and the imagination and feelings of the pupil are the key elements being developed between these ages.

For example, a Biblical story invariably one about the angelic realm – is told to demonstrate the rules of grammar. One angel represents a command, another represents a question, a third represents a statement, and so on. “If we do not believe within ourselves this deeply rooted feeling that there is something higher than ourselves, we shall never find the strength to evolve into something higher.” ~ Rudolf Steiner

The Spirit, ages 14 – 21

From ages fourteen to twenty one children, having connected with their bodies and hearts can now be taught in a more logical, structured fashion. Students are allowed to focus on certain subjects that explore their interests having embraced their true selves and been given a grounded foundation in the world.

As the body becomes disrupted and transformed with adolescence, children are encouraged to embrace *freedom* and their role in the outside world. Specialist teachers will come in and they are able to spread their wings a bit more and take influences from outside forces.

Students can enjoy the slow pace of their former years where they were able to develop their social skills and emotional needs in their own time without the pressures of formal testing.

It is in this stage that pupils may enjoy their emotional maturity and see the fruits of being more in touch with their core and inner voice, a gift that allows them to choose more directly what they want to do in the world without external confusions.

And the development doesn’t stop there! Steiner went on the describe the karmic stages beyond normal school age:

The next three seven-year segments are associated with the Sun (21-42 years old), and the elements of sentient soul, intellectual soul, and consciousness soul.

The next seven-year segment is associated with Mars (42-49 years old), when the soul works hard to impress the full forces of its personality

upon the world. At this time, the soul has the opportunity to a higher state of consciousness called Spirit Self.

The following seven-year segment is associated with Jupiter (49-56 years old), when wisdom is dawning and the ego needs to unfold the Life Spirit.

The final seven-year period is associated with Saturn (56-63 years old) when Saturn completes its second "return" (e.g. comes back to its position it had at one's birth), and the soul can manifest an event higher element of Self called Spirit Man.' ~ Thomas Armstrong

	Birth to 7 years	7 years to 14 years	14 years to 21 years
Consciousness. (How the child makes the world meaningful)	Hands (Peripheral)	Heart	Head
Learning through	Doing	Feeling (Affect)	Thinking
Teacher as	Devoted (presence)	Artist	Scientist
Mode of learning	Imitation	Authority	Ideal
Value	Goodness	Beauty	Truth

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

8. How did Rudolf's Steiner's movement see individuals?

……

……

LET US SUM UP

Development theory is a collection of theories about how desirable change in society is best achieved. Such theories draw on a variety of social science disciplines and approaches. In this unit, multiple theories were discussed, as are recent developments with regard to these theories. Depending on which theory that is being looked at, there are

different explanations to the process of development and their inequalities. Such theories center on various aspects of development including social, emotional, and cognitive growth.

Some of the many issues that developmental psychologists may help patients deal with include:

- motor skill development
- language acquisition
- emotional development
- the emergence of self-awareness and self-concept
- cognitive development during childhood and throughout life
- social and cultural influences on child development
- personality development
- moral reasoning
- developmental challenges and learning disabilities

These professionals spend a great deal of time investigating and observing how these processes occur under normal circumstances, but they are also interested in learning about things that can disrupt developmental processes.

By better understanding how and why people change and grow, this knowledge can then be applied to helping people live up to their full potential.

GLOSSARIES

Culture: A culture is a way of life of a group of people--the behaviors, beliefs, values, and symbols that they accept, generally without thinking about them, and that are passed along by communication and imitation from one generation to the next.

Cognition: It is a term referring to the mental processes involved in gaining knowledge and comprehension.

Society: The aggregate of people living together in a more or less ordered community.

Psychoanalysis: It is defined as a set of psychological theories and therapeutic techniques that have their origin in the work and theories of Sigmund Freud.

Ecology: It is the study of the relationships between living organisms, including humans, and their physical environment; it seeks to understand the vital connections between plants and animals and the world around them.

Assimilation: It means the fitting of new information into previously established cognitive structures (schemas).

Accommodation: It is the alteration of existing cognitive structures (schemas) in response to new information.

Equilibration: It means optimal level of intellectual functioning taking place when there is a balance between assimilation and accommodation.

ANSWERS TO CHECK YOUR PROGRESS

1. Assimilation, Accommodation and Equilibration.
2. Piaget's four distinct cognitive development stages are
   - Sensorimotor stage (Birth to 2 years)
   - Pre-operational stage (2 to 7 years)
   - Concrete Operational stage (7 to 12 years)
   - Formal Operational stage (12 years to adulthood)
3. Lev Semenovich Vygotsky, a Russian psychologist developed the Sociocultural Theory of Cognitive Development.
4. There are 8 distinct stages in Erikson's Theory of Psychosocial Development.
5. The *Oedipus complex* teaches that the unconscious holds repressed thoughts that boys have a desire to have sexual intercourse with their mothers, while wanting to murder their father.
6. The **microsystem** is the smallest and most immediate environment in which the child lives. As such, the microsystem comprises the daily home, school or daycare, peer group or community environment of the child.
7. The **mesosystem** encompasses the interaction of the different **Microsystems** which the developing child finds him in.

8. Rudolf Steiner created a movement that saw individuals as spiritual beings rather than economic fodder or shapes for society to mould.

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*****

BLOCK 3 THE EARLY YEARS

Structure

INTRODUCTION

While you might think of child development as something that begins during infancy, the prenatal period is also considered an important part of the developmental process. Prenatal development is a time of remarkable change that helps set the stage for future psychological development. The brain develops over the course of the prenatal period, but it will continue to go through more changes during the early years of childhood. Let's take a closer look at the major stages and events that take place during the early periods of development.

OBJECTIVES

After going through this unit, you will be able to:

- define conception
- explain various stages prenatal development
- list the various important characteristics of prenatal development
- explicate newborn screening
- list out various newborn screening tests
- elucidate Apgar score
- discuss about various milestones in the development
- comprehend the environmental factors influencing early childhood development
- recognize the role of play in enhancing development

UNIT 11 PRENATAL DEVELOPMENT

OBJECTIVES

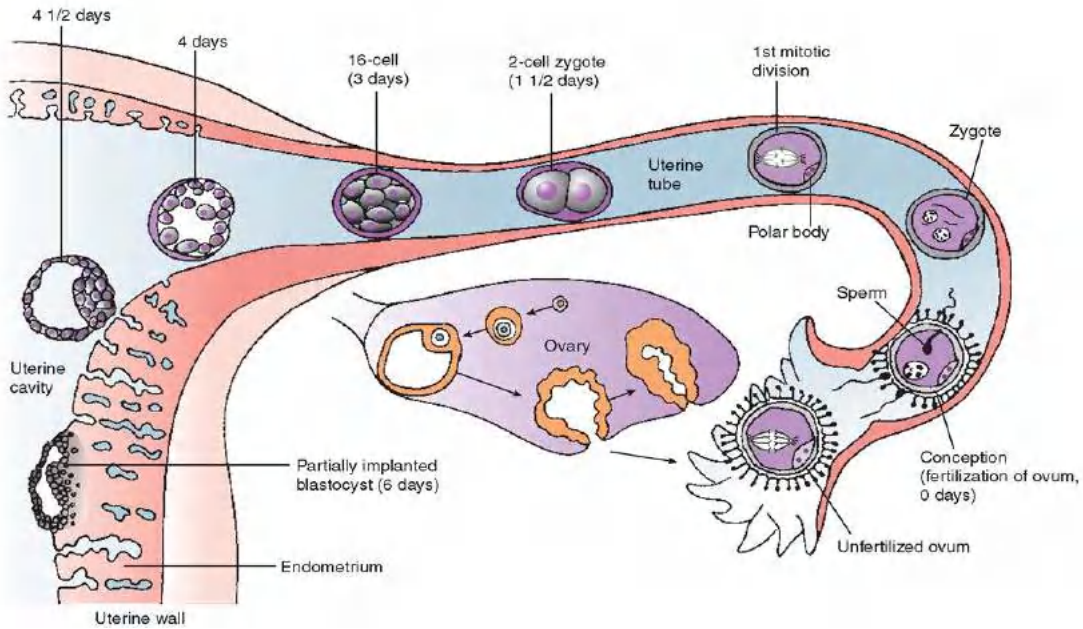
After going through this unit, you will be able to:

- Comprehend the importance of prenatal period for human development.
- Narrate the stages of prenatal development.

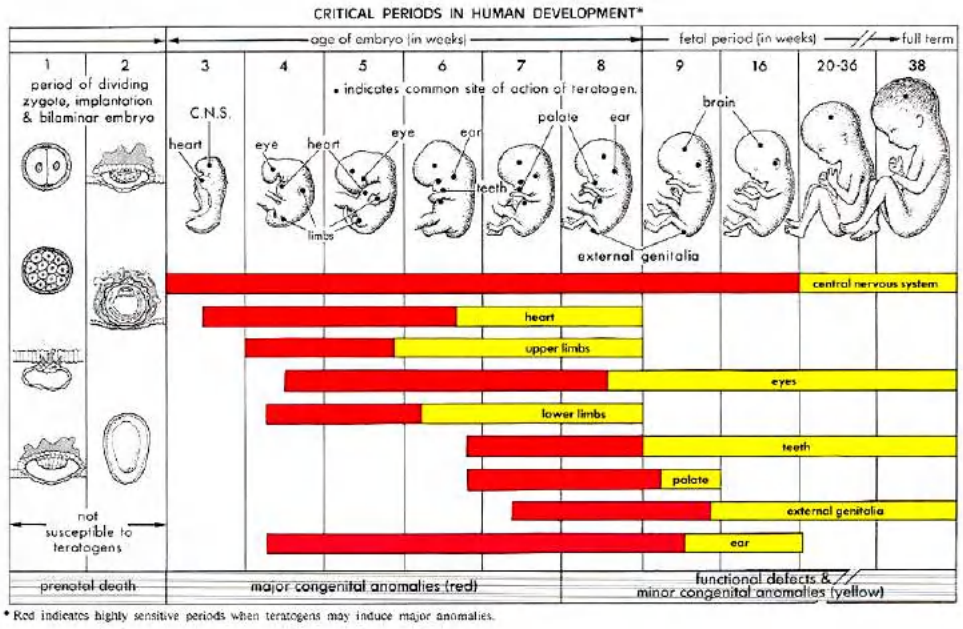
The prenatal development period covers the time from conception to birth and is sometimes described in terms of trimesters (first, second, and third) or of three stages (germinal, embryonic, and fetal).

Conception

Conception occurs when an egg from the mother is fertilized by a sperm from the father. In humans, the conception process begins with **ovulation**, when an ovum, or egg (the largest cell in the human body), which has been stored in one of the mother's two ovaries, matures and is released into the fallopian tube. Ovulation occurs about halfway through the woman's menstrual cycle and is aided by the release of a complex combination of hormones. In addition to helping the egg mature, the hormones also cause the lining of the uterus to grow thicker and more suitable for implantation of a fertilized egg.



If the woman has had sexual intercourse within 1 or 2 days of the egg's maturation, one of the 500 million sperm deposited by the man's ejaculation, which are traveling up the fallopian tube, may fertilize the egg. Although few of the sperm can make the long journey, some of the strongest swimmers succeed in meeting the egg. As the sperm reach the egg in the fallopian tube, they release enzymes that attack the outer jelly-like protective coating of the egg, each trying to be the first to enter. When one of the millions of sperm enters the egg's coating, the egg immediately responds by blocking out all other challengers and at the same time pulling in the single successful sperm.



The Zygote

Most cells in your body have 23 pairs of chromosomes, for a total of 46. The egg and sperm are different. Each egg and each sperm has only one set of 23 chromosomes, not a pair. When fertilization occurs, the 23 chromosomes from the egg fuse with the 23 from the sperm to create a **zygote**, which starts as a fertilized egg, or ovum, with the full complement of 23 pairs of chromosomes. The zygote continues to travel down the fallopian tube to the uterus. Although the uterus is only about 4 inches away in the woman's body, the journey is nevertheless a substantial one for a microscopic organism. Consequently, fewer than half of zygotes survive beyond this earliest stage of life. If the zygote is still viable when it completes the journey, it attaches itself to the wall of the uterus, but if it is not, it is flushed out in the woman's menstrual flow. During this time, the cells in the zygote continue to divide: The original

two cells become four, those four become eight, and so on, until there are thousands (and eventually trillions) of cells. Soon the cells begin to differentiate, each taking on a separate function. The earliest differentiation is between the cells on the inside of the zygote, which begin to form the developing human being, and the cells on the outside, which form the protective environment that provides support for the new life throughout the pregnancy.

The Embryo

Once the zygote attaches to the wall of the uterus, it is known as the **embryo**. During the embryonic phase, which lasts for the next 6 weeks, the major internal and external organs are formed, each beginning at the microscopic level, with only a few cells. The changes in the embryo's appearance continue rapidly from this point until birth.

While the inner layer of embryonic cells is busy forming the embryo, the outer layer is forming the surrounding protective environment that helps the embryo survive the pregnancy. This environment consists of three major structures: The **amniotic sac** is the fluid-filled reservoir in which the embryo (soon to be known as a fetus) lives until birth. The amniotic sac also acts as a cushion against outside pressure and as a temperature regulator. The **placenta** is an organ that allows the exchange of nutrients between the embryo and the mother, while at the same time filtering out harmful material. The filtering occurs through a thin membrane that separates the mother's blood from the blood of the fetus, allowing them to share only the material that can pass through the filter. Finally, the **umbilical cord** links the embryo directly to the placenta and transfers all material to the fetus. Together, the placenta and the umbilical cord protect the fetus from many foreign agents in the mother's system that might otherwise pose a threat.

The Fetus

Beginning in the 9th week after conception, the embryo becomes a **fetus**. The defining characteristic of the fetal stage is growth. All the major aspects of the growing organism were formed in the embryonic phase. Now the fetus has approximately six months to go from weighing less than an ounce to weighing an average of 6 to 8 pounds. That's quite a growth spurt.

The fetus begins to take on many of the characteristics of a human being, including moving (by the third month, the fetus can curl and open its fingers, form fists, and wiggle its toes), sleeping, as well as early forms of swallowing and breathing. The fetus begins to develop its senses, becoming able to distinguish tastes and respond to sounds. Research has found that the fetus even develops some initial preferences. A newborn prefers the mother's voice to that of a stranger, the languages heard in the womb over other languages, and even the kinds of foods that the mother ate during the pregnancy. By the end of the third month of pregnancy, the sexual organs are visible.

Influences of Chromosomes

Every person is made up of cells, each of which contains chromosomes. Chromosomes are genetic material that determines many things about a person, such as eye and hair color, biological sex and personality traits. DNA, or deoxyribonucleic acid, is responsible for the transmission of genetic material. A mother and father's DNA are passed on at the moment of conception.

A human being has a total of 23 pairs of chromosomes. The developing zygote gets half of its chromosomes from one parent and the other half from the other parent. The first 22 pairs of chromosomes are known as autosomes and determine things such as eye and hair color. The last pair, known as the sex chromosomes, determines a person's biological sex. Females have two X chromosomes, while males have an X and a Y chromosome.

Gene Expression and Regulation

Gene expression is carefully regulated in every organism to allow the organism to adapt to differing conditions. The expression of genetic information in a given cell or organism is neither random nor fully pre-programmed. Genes can either be dominant or recessive, meaning they can either be expressed or hidden. Depending on the dominance of each chromosome that is inherited from each parent, the child may or may not show the inherited trait.

Gene regulation is the process by which cells differentiate. Among other things, it is the process in which a cell determines which genes it will express and when. Cell differentiation is a process by which a less specialized cell becomes a more specialized cell. For example, as a zygote develops, gene regulation changes some cells into brain cells

and others into liver cells. Other cells will become the lining of the stomach, the intestines, and the sexual reproductive organs.

Mutation is when a sudden change in a segment of the DNA occurs. Some mutations of the genes can result in conditions such as Down Syndrome or Turner's Syndrome.

The Importance of Genetics in Human Development

Differences in gene expression whether as a result of standard regulation processes or through mutation are crucial to an individual's physical and psychological development. The exact extent to which genes, as opposed to an individual's environment, determine or influence psychological development is hotly debated. This controversy is known as the "nature-vs.-nurture debate." However, an individual's genetic makeup at the very least serves as a crucial baseline (which may then be mediated by the environment) for such characteristics as the ability to begin learning spoken language, such personality traits as a tendency toward aggressive versus submissive behavior, and risk levels for such diseases as alcoholism and addiction.

Before birth, a fetus has of course had limited opportunity to be shaped by its environment, beyond factors such as the mother's diet, substance use and anxiety level. For this reason, genetics play a particularly important role in prenatal development.

Environmental Impacts on Prenatal Development

Environmental factors, such as exposure to teratogens, can have a range of impacts on the developing fetus. Prenatal development is the process that occurs during the 40 weeks prior to the birth of a child. During each prenatal stage, environmental factors affect the development of the fetus. The developing fetus is completely dependent on the mother for life, and it is important that the mother receives prenatal care, which is medical care during pregnancy, that monitors the health of both the mother and the fetus. According to the National Institutes of Health ([NIH], 2013), routine prenatal care can reduce the risk of complications to the mother and fetus during pregnancy.

When the zygote attaches to the wall of the uterus, the placenta is formed. The placenta provides nourishment and oxygen to the fetus. Most of everything that the mother ingests, including food, liquid, and even medication, travels through the placenta to the fetus. Hence there is the common phrase which states that a mother “eats for two.” Anything the mother is exposed to in the environment affects the fetus. If the mother is exposed to something harmful, the child can show life-long effects.

Teratogens

A teratogen is any environmental substance or agent biological, chemical, or physical—that can have a detrimental effect on a developing fetus. Exposure to teratogens during the prenatal stage can significantly raise the risk of birth defects. Several factors influence the amount of damage a teratogen can have, including dose or level of exposure, heredity, age of the teratogen, and any other negative influences (for example, several teratogens or a teratogen combined with poor health). There are several known teratogens that expectant mothers are advised to avoid during pregnancy, including alcohol, prescription and/or illegal drugs, and tobacco.

Alcohol

Alcohol and most drugs cross the placenta and affect the fetus. Alcohol use during pregnancy has been found to be the leading preventable cause of mental disabilities in children in the United States (Maier & West, 2001). Excessive maternal drinking while pregnant can cause fetal alcohol spectrum disorders (FASD) with life-long consequences for the child, ranging in severity from minor to major. It is unknown as to how much alcohol is necessary to cause damage and so doctors typically recommend that alcohol should be completely avoided during pregnancy. Physically, children with FASD may have a small head size and abnormal facial features. Cognitively, these children may have poor judgment, poor impulse control, higher rates of ADHD and learning issues and lower IQ scores. These developmental problems and delays persist into adulthood (Streissguth et al., 2004). Based on studies conducted on animals, it also has been suggested that a mother’s alcohol consumption during pregnancy may predispose her child to like alcohol (Youngentob et al., 2007).

Each organ of the fetus develops during a specific period in the pregnancy, called the *critical* or *sensitive period*. Research into FASD has demonstrated that the time during which a developing fetus is exposed to alcohol can dramatically affect the appearance of facial characteristics associated with FASD. Specifically, this research suggests that alcohol exposure that is limited to day 19 or 20 of gestation can lead to significant facial abnormalities in the offspring of primates (Ashley, Magnuson, Omnell, & Clarren, 1999). Given regions of the brain also show sensitive periods during which they are most susceptible to the teratogenic effects of alcohol (Tran & Kelly, 2003).

Prescription and/or Illegal Drugs

Use of any type of drug whether illegal, prescription, or over-the-counter can be dangerous during pregnancy. Illegal drugs such as heroine, cocaine, and methamphetamine can cause a myriad of problems for the developing fetus. Babies can be born addicted to certain drugs and are also more likely to be born prematurely. They have low birth weight and experience other physical defects. Many end up with attention and behavioral problems as well.

Prescription drugs taken during pregnancy such as streptomycin, tetracycline, some antidepressants, progestin, synthetic estrogen, Accutane, thalidomide, and diethylstilbestrol (known as DES) as well as over-the-counter drugs such as diet pills can also result in teratogenic outcomes for the developing fetus. Thalidomide causes bodily deformities as well as damage to internal organs. DES-exposed fetuses have been shown to have higher rates of cancer and infertility as adults. Additionally, high doses of aspirin are known to lead to maternal and fetal bleeding, although low-dose aspirin is usually not harmful. The classification of a drug (as *A, B, C, D,* or *X*) allows a mother to make determinations about using drugs during pregnancy. For example, class *A* drugs are deemed always safe, whereas class *X* drugs have proven to be more damaging to the fetus.

Smoking

Smoking tobacco is also considered a teratogen because nicotine travels through the placenta to the fetus. When the mother smokes, the developing baby experiences a reduction in blood oxygen levels.

According to the Centers for Disease Control and Prevention (2013), smoking while pregnant can result in premature birth, low-birth-weight infants, stillbirth, and sudden infant death syndrome (SIDS) the sudden and unexplained death of a child less than one year of age. Other issues that can be caused by prenatal exposure to smoking are inattentiveness, muscle tension, and colic (a form of pain which starts and stops abruptly and occurs due to muscular contractions in the body). The more a mother smokes or is exposed to second-hand smoke, the greater the risk. However, quitting (even after smoking during pregnancy) greatly reduces the risks of these problems.

Other Teratogens

Other teratogens that affect prenatal development include radiation, pollution, and infectious disease. Radiation increases the risk of childhood cancer, as well as emotional and behavioral disorders. Because of this, it is recommended that pregnant women avoid x-rays unless absolutely necessary. Pollution, such as exposure to mercury or PCBs, can cause physical deformities, abnormal speech and difficulty with coordination. Maternal infections such as viruses or parasites can also cause brain damage to the fetus, or even death.

Maternal Stress and Depression

Any form of prenatal stress felt by the mother can have negative effects on various aspects of fetal development, and can cause harm to both mother and child. When a mother is under stress, physiological changes occur in the body that could harm the developing fetus. Additionally, a stressed mother is more likely to engage in behaviors that could negatively affect the fetus, such as smoking, drug use and alcohol abuse. Prenatal depression is often caused by the stress and worry that pregnancy can bring, only at a more severe level. Other factors that can put a person at risk for prenatal depression include unplanned pregnancy, difficulty becoming pregnant, history of abuse and economic or family problems.

The use of antidepressants in pregnancy has been associated with a variety of risks for the fetus with varying degrees of proof of causation. While some studies clearly show the adverse outcomes of prenatal antidepressant exposure, others are less clear and complications arise

because depression itself is independently associated with negative pregnancy outcomes. Determining the extent to which adverse outcomes are caused by antidepressant use or by depression or a combination of both is difficult to measure; it is also important to factor in the negative consequences of a mother going off prescription antidepressants during pregnancy, which may adversely effects her health in other ways.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

1. When does conception occur in humans?
   ……
   ……

2. How many chromosomes are there in man and what are its types?
   ……
   ……

3. What is mutation?
   ……
   ……

4. What is meant by a teratogen?
   ……
   ……

UNIT 12 BIRTH AND NEONATAL DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Describe the screening procedure for the neonate.
- Discuss the complications of child birth on human development.

Screening the Newborn

Newborn screening is the practice of testing every newborn for certain harmful or potentially fatal disorder that isn't otherwise apparent at birth.

Popularly known as Newborn screening (NBS), newborn screening is a medical procedure where a newborn baby is screened within 72 hours of birth for any disorders of diseases that might affect the baby's normal functions. Metabolic disorders, blood diseases, genetic disorders, etc. come to the foray very early if the baby is given a NBS. Doctors suggest it to parents if they suspect anything in the baby. The idea is to perform the tests and detect diseases if any at the earliest stage possible so that the necessary treatment can be provided at the very starting of the disease and it can be cured. It is also important to keep in mind here that the tests are just to check the symptoms and should not be considered as the final diagnosis.

NBS has two other popular names for it. One is Neonatal screening and the other one is Guthrie test named after the founder of this test. Robert Guthrie is known all over the world as the father of Newborn Screening.

In many countries, hospitals have made these tests mandatory but it is a sad thing that in India there is no Government funded Neonatal screening center. Therefore, it always comes as an extra financial cost on the parents wishing to perform the tests. Another huge pull down is that there is very less awareness of these tests in India. Only a few hospitals in metropolitan cities like Delhi, Mumbai and Bangalore perform these tests.

The good news is, the scenario is gradually changing in India. With increasing awareness in people, it is a positive hope for the medical fraternity that these tests will soon be supported by the Government to ensure a healthier life for people of India.
These tests are done shortly after the birth. Blood samples are taken from the baby's heels within 24-48 hours after the birth. The blood samples are then sent to the lab where tests are done using advanced methods like Tandem Mass Spectrometry and diseases if any are effectively identified. The procedure also includes a hearing test. While some countries have even included a heart test, that test is yet to reach India.

Newborn Screening Tests

It is most likely that your baby will be tested for these:-

- **Maple syrup urine disease:** A metabolic disorder where the baby's body is unable to breakdown certain proteins in the urine resulting in a sweet-smelling urine, like that of maple syrup.
- **Congenital Adrenal Hyperplasia:** A genetic disorder where the genes undergo mutations to result in less production of sex steroids.
- **Glucose-6-Phosphate Dehydrogenase Deficiency:** A genetic condition where the body continuously destroys red blood cells.
- **Phenylketonuria:** A metabolic disorder where amino acid builds up in the body.
- **Galactosemia:** In this condition, a baby is unable to process galactose, the sugar in milk. Inability in processing galactose may lead to liver and brain impairment.
- **Sickle Cell Anemia:** In this condition, the red blood cells are not the right shape and hence cannot work as normal red blood cells thus causing anemia.
- **Hearing Test:** The newborn is tested for any hearing inability.

The reason behind these tests is to detect a disease if any at its earliest stage. This gives the doctors a lot of time to treat the babies and cure them off the diseases.

Most often, babies who are given a NBS are normal and no abnormality is detected. Parents often feel that everything is alright because a newborn does not exhibit any signs or symptoms of any disorder whatsoever. It may be noted here that any underlying condition will surface its symptoms and signs only after a few weeks post birth. Though we all hope that our babies are all hale and hearty. However, just in case a baby has a condition that is left undiagnosed, it will cause the baby health complications in the future. In such a case, the baby's mental and physical growth can be inhibited.

Thus, getting your newborn screened for various disorders and diseases is crucial, so as to enable your baby to live a healthy and happy life.

APGAR SCORE

Apgar score is a method to quickly summarize the health of newborn children. Dr. Virginia Apgar, an anesthesiologist at New York

- Presbyterian Hospital, developed the score in 1952 in order to quantify the effects of obstetric anesthesia on babies.

The Apgar scale is determined by evaluating the newborn baby on five simple criteria on a scale from zero to two, then summing up the five values thus obtained. The resulting Apgar score ranges from 0 to 10. The five criteria are summarized using words chosen to form a backronym (Appearance, Pulse, Grimace, Activity, Respiration).

The Apgar score is a test given to newborns soon after birth. This test checks a baby's heart rate, muscle tone and other signs to see if extra medical care or emergency care is needed.

The test is usually given twice. Once at 1 minute after birth, and again at 5 minutes after birth. Sometimes, if there are concerns about the baby's condition, the test may be given again.

In the test, five things are used to check a baby's health. Each is scored on a scale of 0 to 2, with 2 being the best score. They are;

1. **A**ppearance (skin color)
2. **P**ulse (heart rate)
3. **G**rimace response (reflexes)
4. **A**ctivity (muscle tone)
5. **R**espiration (breathing rate and effort)

Doctors, midwives or nurses add up these five factors for the Apgar score. Scores are between 10 and 0. Ten is the highest score possible, but very few babies only get it. That's because most babies' hands and feet remain blue until they have warmed up.

Apgar Scoring

Apgar Sign	**2**	**1**	**0**
Appearance (skin color)	Normal color all over (hands and feet are pink)	Normal color (but hands and feet are bluish)	Bluish-gray or pale all over
Pulse (heart rate)	Normal (above 100 beats per minute)	Below 100 beats per minute	Absent (no pulse)

Grimace ("reflex irritability")	Pulls away, sneezes, coughs, or cries with stimulation	Facial movement only (grimace) with stimulation	Absent (no response to stimulation)
Activity (muscle tone)	Active, spontaneous movement	Arms and legs flexed with little movement	No movement, "floppy" tone
Respiration (breathing rate and effort)	Normal rate and effort, good cry	Slow or irregular breathing, weak cry	Absent (no breathing)

A baby who scores a 7 or above on the test is considered in good health. A lower score does not mean that your baby is unhealthy. It means that your baby may need some immediate medical care, such as suctioning of the airways or oxygen to help him or her breathe better. Perfectly healthy babies sometimes have a lower-than-usual score, especially in the first few minutes after birth.

A slightly low score (especially at 1 minute) is common, especially in babies born:

- after a high-risk pregnancy
- through a C-section
- after a complicated labor and delivery
- prematurely

At 5 minutes after birth, the test is given again. If a baby's score was low at first and hasn't improved, or there are other concerns, the doctors and nurses will continue any necessary medical care. The baby will be monitored closely.

Many babies with low scores are perfectly healthy and do just fine after adjusting to life outside the womb.

If your doctor or midwife is concerned about your baby's score, he or she will let you know and will explain how your baby is doing, what might be causing problems (if any) and what care is being given.

This test was not designed to predict a baby's long-term health, behavior, intelligence, personality, or outcome. It was designed to help health care providers tell a newborn's overall physical condition so that they could quickly decide whether the baby needed immediate medical care.

REFLEXES AND RESPONSES

Neonatal reflexes or primitive reflexes are the inborn behavioral patterns that develop during uterine life. They should be fully present at birth and are gradually inhibited by higher centers in the brain during the first three to 12 months of postnatal life. These reflexes, which are essential for a newborn's survival immediately after birth, include sucking, swallowing, blinking, urinating, hiccupping, and defecating. These typical reflexes are not learned; they are involuntary and necessary for survival.

A normal birth is considered full term if the delivery occurs during the thirty-seventh to fortieth week after conception. Developmentally, the baby is considered a neonate for the first 28 days of life. At birth, the neonate must immediately make five major adjustments:

- Transition from an aquatic environment to a world of air. The first breath begins even before the umbilical cord is cut.
- Eat and digest his or her own food since the circulatory relationship between mother and baby stops with the severance of the umbilical cord.
- Excrete his or her own wastes.
- Maintain his or her own body temperature.
- Adjust to intermittent feeding since food is now only available at certain intervals.

Under normal developmental conditions, these neonatal reflexes represent important reactions of the nervous system and are only observable within a specific period of time over the first few months of life. The following reflexes are normally present from birth and are part of a normal newborn evaluation:

- The Moro reflex (or startle reflex) occurs when an infant is lying in a supine position and is stimulated by a sudden loud noise that causes rapid or sudden movement of the infant's head. This stimulus results in a symmetrical extension of the infant's extremities while forming a C shape with the thumb and

forefinger. This is followed by a return to a flexed position with extremities against the body. Inhibition of this reflex occurs from the third to the sixth month. An asymmetrical response with this reflex may indicate a fractured clavicle or a birth injury to the nerves of the arm. Absence of this reflex in the neonate is an ominous implication of underlying neurological damage.

- Asymmetrical tonic neck reflex (sometimes called the tonic labyrinthine reflex) is activated as a result of turning the head to one side. As the head is turned, the arm and leg on the same side will extend while the opposite limbs bend, in a pose that mimics a fencer. The reflex should be inhibited by six months of age in the waking state. If this reflex is still present at eight to nine months of age, the baby will not be able to support its weight by straightening its arms and bringing its knees beneath its body.
- Symmetrical tonic neck reflex occurs with either the extension or flexion of the infant's head. Extension of the head results in extension of the arms and flexion of the legs, and a flexion of the head causes flexion of the arms and an extension of the legs. This reflex becomes inhibited by the sixth month to enable crawling.
- Grasping reflex occurs as the palmar reflex when a finger is placed in the neonate's palm and the neonate grasps the finger. The palmar reflex disappears around the sixth month. Similarly, the plantar reflex occurs by placing a finger against the base of the neonate's toes and the toes curl downward to grasp the finger. This reflex becomes inhibited around the ninth to tenth month.
- Rooting reflex is stimulated by touching a finger to the infant's cheek or the corner of the mouth. The neonate responds by turning the head toward the stimulus, opening the mouth and searching for the stimulus. This is a necessary reflex triggered by the mother's nipple during breastfeeding. It is usually inhibited by the third to fourth month.
- Sucking reflex is triggered by placing a finger or the mother's nipple in the infant's mouth. The neonate will suck on the finger or nipple forcefully and rhythmically and the sucking is coordinated with swallowing. Like the rooting reflex, it is inhibited by the third to fourth month.

- Babinski or plantar reflex is triggered by stroking one side of the infant's foot upward from the heel and across the ball of the foot. The infant responds by hyperextending the toes; the great toe flexes toward the top of the foot and the other toes fan outward. It generally becomes inhibited from the sixth to ninth month of post natal life.
- Blink reflex is stimulated by momentarily shining a bright light directly into the neonate's eyes causing him or her to blink. This reflex should not become inhibited.

TABLE 1 Common Infant Motor Reflexes

Reflex	***Stimulus/Action***
Blinking	In response to a puff of air, the infant closes both eyes.
Babinski	In response to stroking the side of its foot, the infant twists its foot inward and fans out its toes.
Grasping	In response to an object pressed against its palm, the infant attempts to grasp the object.
Moro	In response to a shock or loud noise, the infant arches its back and throws its arms outward.
Rooting	In response to stroking its cheek, the infant turns its head toward the touch and attempts to suck.
Stepping	In response to holding the infant so that its feet barely touch a surface, the infant "walks."
Sucking	In response to inserting a finger or nipple into its mouth, the infant begins rhythmically sucking.
Babkin	In response to stroking its forehead, the infant turns its head and opens its mouth.
Plantar	In response to touching the ball of the foot, the infant curls its toes under.

- Pupillary reflex occurs with darkening the room and shining a penlight directly into the neonate's eye for several seconds. The pupils should both constrict equally. This reflex should not disappear.
- Galant reflex is stimulated by placing the infant on the stomach or lightly supporting him or her under the abdomen with a hand and, using a fingernail, gently stroking one side of the neonate's spinal column from the head to the buttocks. The response

occurs with the neonate's trunk curving toward the stimulated side. This reflex can become inhibited at any time between the first and third month.

- Stepping reflex is observed by holding the infant in an upright position and touching one foot lightly to a flat surface, such as the bed. The infant responds by making walking motions with both feet. This reflex will disappear at approximately two months of age.
- Prone crawl reflex can be stimulated by placing the neonate prone (face down) on a flat surface. The neonate will attempt to crawl forward using the arms and legs. This reflex will be inhibited by three to four months of age.
- Doll's eye reflex can be noted with the infant supine (lying on the back) and slowly turning the head to either side. The infant's eyes will remain stationary. This reflex should disappear between three to four months of age.

Neonatal reflexes

Reflex	Stimulation	Response	Duration
Babinski	Sole of foot stroked	Fans out toes and twists foot in	Disappears at nine months to a year
Blinking	Flash of light or puff of air	Closes eyes	Permanent
Grasping	Palms touched	Grasps tightly	Weakens at three months; disappears at a year
Moro	Sudden move; loud noise	Startles; throws out arms and legs and then pulls them toward body	Disappears at three to four months
Rooting	Cheek stroked or side of mouth touched	Turns toward source, opens mouth and sucks	Disappears at three to four months

Stepping	Infant held upright with feet touching ground	Moves feet as if to walk	Disappears at three to four months
Sucking	Mouth touched by object	Sucks on object	Disappears at three to four months
Swimming	Placed face down in water	Makes coordinated swimming movements	Disappears at six to seven months
Tonic neck	Placed on back	Makes fists and turns head to the right	Disappears at two months

Source: Child Development, 6th ed. Wm. C. Brown Communications, Inc., 1994.

Neuro-Perceptual Development

Perception is the ability of humans to acquire information from the world through their senses. Perceptual development refers to the development of these senses, and this takes place mainly in the first year of life, according to the majority of research into this area. The sensory organs of children and their connections with the respective areas of the central nervous system show a dramatic development during the first year of life. Many of the experiments in this area are concerned with the development of the visual apparatus, e.g. depth perception, binocular information, the perception of faces and the visual preferences of children.

Infants' **sensations** and **perceptions** are no longer completely obscure to researchers, who have learned how to measure infants' sensory and perceptual capacities. In their efforts to understand whether babies can distinguish between one stimulus and another investigator often make use of the infant's tendency to **habituate**, or become used to, a given stimulus. Another technique is to use the **visual preference method**, in which researchers pinpoint a baby's preference for one of two alternative stimuli.

Hearing: Babies are Good Listeners

At birth, babies are more sensitive to high-pitched sounds than low-pitched ones, and a sound must be slightly louder for them to detect it. Overall, however, a newborn's hearing is very well developed. Newborns can distinguish among different kinds of sounds and tell what direction a sound comes from. They are also predisposed to respond to human voices, which may be significant for later social and language development.

Vision: How Babies See Their Worlds

Although visual capacities continue to develop throughout the first year of life, newborns are sensitive to brightness and movement, can distinguish colors, and can track moving objects. Because they cannot focus their eyes very well, newborns do not have good **visual acuity** at distances beyond close range, but their acuity improves in the first 3 months of life. During the same period they become better able to perceive patterns, including the patterning of human faces.

The accurate perception of distance improves with age as well, as babies begin to coordinate their two eyes and use **stereoscopic vision**. Experiments with the **visual cliff** demonstrate that by the time babies are between 6 and 14 months old they are capable of depth perception. **Shape constancy** is something that even newborns seem to possess. **Size constancy**, however, appears to be a skill that develops partly through experience.

Smell, Taste, and Touch

Newborns can discriminate among a variety of odors. By 1 week of age they have learned to distinguish their mother's smell from those of other people. Newborns are also able to discriminate different tastes, and they display a preference for sweet over sour or bitter.

The sense of touch is activated long before birth, and newborns are clearly responsive to both positive and negative types of touch. Contrary to past beliefs, they are highly sensitive to pain. Infants also quickly learn to discriminate among objects based only on their sense of touch.

Intermodal Perception: How Infants Transfer Learning From One Sense to Another

From a very early age, using their capacity for **intermodal perception**, babies can integrate information from two different senses, such as the sounds that go with a certain sight. This finding challenges the commonly held view that infants begin life experiencing totally unrelated sensations in each sensory system.

- An infant's sight only hours after being born is 20/240 which means that the infant can only see 20 feet away what a normal adult can see 240 feet away. At 6 months this increases to 20/40.
- At 3 months, the child can match voices to faces, and distinguish between male and female and ethnic groups
- Infants begin to discriminate some colors at 4 to 8 weeks and by 4 months they have color preferences
- At 3 months infants can see size constancy and shape constancy when they are at different distances or angles from the object. Infants are able to perceive occluded objects as a whole at 2 months and they acquire depth perception at around 3 to 4 months.

Perception is interpretation of sensation. For example, the air waves that contact the ears might be interpreted as noise or as musical sounds. The physical energy transmitted to the retina of the eye might be interpreted as a particular color, pattern, or shape, depending on how it is perceived.

The Ecological View

Created by the Gibsons, the ecological view states that people directly perceive information that exists in the world. Perception brings people in contact with the environment in order to interact with and adapt to it. Affordances provide opportunities for interaction offered by objects that fit within our capabilities to perform activities. Researchers have developed a number of methods to assess the infants perception, including the visual preference method (which Frantz used to determine young infants' interest in looking at patterned over nonpatterned displays), habituation and dishabituation, and tracking.

Visual Perception

The infant’s visual acuity increases dramatically in the first year of life. Infants can distinguish some colors by 8 weeks of age, and possibly by as early as 4 weeks. Young infants systematically scan human faces. By 3 months of age, infants show size and shape constancy. As visual perception develops, infants develop visual expectations. In Gibson and Walk's classic study, infants as young as 6 months of age had depth perception. Much of vision develops from biological foundations but environmental experiences can contribute to the development of visual perception. During the preschool years, children become better at differentiating colors and scanning the visual world.

After the early adult years, visual acuity declines. Eye accommodation decreases the most from 40 to 59 years of age. In older adults, the yellowing of the eye's lens reduces color differentiation, and the ability to see the periphery of a visual field declines. Significant declines in visual functioning related to glare characterize adults 75 years and older and even more so those 85 years and older. Three diseases that can impair the vision of older adults are cataracts, glaucoma, and macular degeneration.

Hearing

The fetus can hear sounds such as the mothers voice and music during the last two months of pregnancy. Immediately after birth newborns can hear, but their sensory threshold is higher than that of adults. Developmental changes in the perception of loudness, pitch, and localization of sound occur during infancy. Most childrens hearing is adequate, but one special concern is otitis media. Hearing can start to decline by the age of 40, espically sensitivy to high-pitched sounds. However, hearing impairment usually doesnt become much of an impediment until late adulthood. Hearing aids can diminish hearing problems for many older adults.

Other Senses

Newborns can respond to touch and feel pain. Sensitivity to pain decreases in late adulthood. Newborns can differentiate odours, and sensitivity to taste is present before birth. Smell and taste may decline in late adulthood, although in healthy individuals the decline is minimal.

Intermodal Perception

Crude, exploratory forms of intermodal perception-the ability to relate the intergrate information from two or more sensory modalities-are present in newborns and become sharpened over the first year of life.

Nature/Nurture and Perceptual Development

In perception, nature advocates are referred to as nativists and nurture proponents are called empiricists. The Gibsons' ecological view that has guided much as perceptual development research leans toward a nativist approach but still allows for development changes in distinctive features. Piaget's constructivist view leans toward an empiricist approach, emphasizing that many perceptual accomplishments must await the development of cognitive stages in infancy. A full account of perceptual development includes the roles of nature, nurture, and the developing sensitivity to information.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

5. Who is the father of newborn screening and name some newborn screening tests?

   .....

   .....

6. What are the 5 things checked in an APGAR score?

   .....

   .....

7. Explain the grasping reflex in a newborn?

   .....

   .....

UNIT 13 MILESTONES AND VARIATIONS IN DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Discuss the milestones of human development.
- Enumerate the variations in human development.

A developmental milestone is an ability that is achieved by most children by a certain age. Developmental milestones can involve physical, social, emotional, cognitive and communication skills such as walking, sharing with others, expressing emotions, recognizing familiar sounds, and talking.

For example, between the ages of 9 to 12 months, children begin to achieve physical milestones such as standing up or even walking. While the exact age at which a child achieves a particular milestone can vary, parents may become concerned if their child has not achieved a skill that most of his or her same-age peers can perform. If a child has not learned to walk by 18 months, for example, the parents should consult their child's doctor.

You can think of the developmental milestones as a checklist. They represent what an average child can do around a particular age although there is a considerable amount of individual differences. For example, some kids may begin walking as early as 9 or 10 months while others do not begin to walk until around 14 to 15 months. By looking at the different developmental milestones, parents, doctors, and teachers are able to better understand how children typically develop and keep and eye out for any potential developmental problems.

Types

There are four basic categories for developmental milestones:

1. **Physical milestones** involve both large-motor skills and fine-motor skills. The large-motor skills are usually the first to develop and include sitting up, standing, crawling, and walking. Fine-motor skills involve precise movements such as grasping a spoon, holding a crayon, drawing shapes, and picking up small objects.

	1 mo	2 mo	4 mo	6 mo	9 mo	1 year	2 years	3 years	4 years	5 years	6-12 years	12+ years
Physical/Motor	▪ Reacts to pain	▪ Eyes follow object to midline	▪ Eyes follow object past midline	▪ Transfers objects hand to hand (switches hands)	▪ Pincer grasp (10 months)	▪ Pats pictures in book	▪ Copies a line (scribbles with crayons)	▪ Copies a circle ▪ Unbutton buttons (undress)	▪ Copies a cross ▪ Copies a rectangle (4.5y)	▪ Copies a square	▪ Copies a triangle (6y) ▪ Copies diamonds (7y) ▪ Prints letters ▪ Ties shoes ▪ Draws recognizable man with head, body, and limbs	▪ Adolescent growth spurt (girls before boys) ▪ Onset of sexual maturity (10+ y) ▪ Development of primary and secondary sexual characteristics
		Head up prone	Rolls over supine to prone	Rolls prone to supine		Stacks 3-4 cubes (18 mo)	Stacks six cubes	Stacks 9 cubes	Grooms self (brushes teeth)	Partially dresses self	▪ Boys heavier than girls ▪ Permanent teeth 11y	
			▪ Sits with support	▪ Sits well unsupported	▪ Stands with help (8mo) ▪ Crawls (9mo) ▪ Cruises (10mo)	▪ Walks (13 mo) ▪ Ascends stairs (child manner)	▪ Walks backwards ▪ Descends stairs (child manner) ▪ Runs	▪ Rides tricycle ▪ Ascends stairs (adult manner)	▪ Hops on one foot ▪ Descends stairs (adult manner)		▪ Skips with alternating feet ▪ Rides bicycle	
					▪ Fear of falling	▪ Emergence of hand preference (18 mo)	▪ Can turn doorknob, unscrew jar lid ▪ High activity level	▪ Cuts paper with scissors ▪ Bowel and bladder control (toilet training)		Complete sphincter control	▪ Refined motor skills	
						▪ Kick ball, throws ball	▪ Able to aim thrown ball	▪ Catches ball with arms	▪ Throws overhand	▪ Catches ball with 2 hands	▪ Gains athletic skill Coordination increases	
Social	▪ Endogenous smile	▪ Exogenous smile	▪ Preferential social smile	▪ Stranger anxiety	▪ Pat-a-cake, peek-a-boo	▪ Separation anxiety ▪ Dependence on parental figure (rapprochemont) ▪ Onlooker and parallel play	▪ Selfish and self-centered ▪ Imitates mannerisms and activities ▪ May be aggressive ▪ "No" is favorite word	▪ Group play ▪ Fixed gender identity ▪ Sex-specific play ▪ Understands "taking turns" ▪ Knows own gender and full name	▪ Imitation of adult roles ▪ Curiosity about sex (playing doctor) ▪ Nightmares and monster fears ▪ Imaginary friends	▪ Conformity to peers important ▪ Romantic feelings for others ▪ Oedipal phase	▪ "Rules of the game" are key ▪ Organized sport possible ▪ Being team member focal for many ▪ Separation of the sexes ▪ Sexual feelings not apparent ▪ Demonstrating competence is key	▪ Identity is key issue ▪ Conformity most imp. ▪ Organized sports diminish for many ▪ Cross-gender relationships
Cognitive (Piaget)	▪ Sensation/movement ▪ Schemas ▪ Assimilation and accommodation ▪ No object permanence (if he can't see it anymore, it doesn't exist) Others: ▪ Puts everything in mouth, Feet in mouth (5 mo) ▪ Bang and rattle stage ▪ 1st year of life: play is solitary and exploratory, issues of trust are key, parental figure central					▪ Achieves object penetrance	▪ A world of objects ▪ Can use symbols ▪ Transition objects e.g. blanket or teddy bear ▪ Strong egocentrism ▪ Concrete use of objects	▪ Repeats 3 digits ▪ Points to and counts 3 objects ▪ Names colors	▪ Repeats 4 digits ▪ Identifies body parts	▪ Counts 10 objects correctly	▪ Abstract from objects ▪ Law of conservation achieved ▪ Adherence to logic ▪ Seriation ▪ No hypotheticals (no "ifs" ▪ Mnemonic strategies ▪ Personal sense of right and wrong	▪ Abstract from abstractions ▪ Systematic problem-solving strategies ▪ Can handle hypotheticals ▪ Deals with past, present, future.
Language			▪ Laughs aloud	▪ Babbles	▪ Repetitive responding (8 mo) ▪ Mama, dada ▪ Bye-bye	▪ Uses 10 words	▪ Use of pronouns ▪ Parents understand more ▪ Telegraphic sentences ▪ 2 word sentences ▪ Uses 250 words	▪ Complete sentences ▪ Uses 900 words, but understands 4x that ▪ Strangers can understand ▪ Recognizes common objects in pictures	▪ Can tell stories ▪ Uses prepositions ▪ Uses plurals ▪ Compound sentences	▪ Asks the meaning of words ▪ Abstract words elusive	▪ Shift from egocentric to social speech ▪ Incomplete sentences decline ▪ Vocabulary expands geometrically (50,000 words by age 12) ▪ Identifies right and left	▪ Adopts personal speech patterns ▪ Communication becomes focus of relationships
Others				▪ Babbles (babbles) ▪ 6 strangers switch sitting at 6 months.	▪ It takes 9 months to be a "mama" ▪ Pinches furniture to walk	▪ Walking away from mom causes anxiety ▪ Stack # of cubes: 3 x age in years	▪ Puts 2 words together at age 2. ▪ At age 2, 2/4 (1/2) of speech understood by strangers	▪ Tricycle, 3 numbers, 3 colors, 3 kids make a group ▪ ¾ of speech understood by strangers	▪ Song "head, shoulder, knees, and toes" 4 parts you that at age 4 can identify body parts. ▪ 4/4 of speech understood by strangers ▪ Past tense, speaking of things that happened "be4" ▪ At 2 years can draw 1 line, so at 4 years can draw 2 lines (a cross).	▪ Brain at 75% of adult weight	▪ At 6 years: skips, shoes, person with 6 parts	

Child manner: step-by-step **Adult manner**: alternates feet **Onlooker play**: one child watches the other child play **Parallel play**: 2 children, each plays alone, but comforted by the fact that another child is playing nearby.
Cruises: walks while holding furniture

2. **Cognitive milestones** are centered on a child's ability to think, learn, and solve problems. An infant learning how to respond to facial expressions and a preschooler learning the alphabet are both examples of cognitive milestones.
3. **Social and emotional milestones** are centered on children gaining a better understanding of their own emotions and the emotions of others. These milestones also involve learning how to interact and play with other people.
4. **Communication milestones** involve both language and nonverbal communication. A one-year-old learning how to say his first words and a five-year-old learning some of the basic rules of grammar are examples of important communication milestones.

Variations in Development

While most of these milestones typically take place during a certain window of time, there is one important caveat. Parents and caregivers must remember that **each child is unique**. Not all kids are going to hit these milestones at the same time. Some children might hit certain milestones very early, such as learning how to walk or talk much earlier than their same-age peers. Other children might reach these developmental milestones much later. This does not necessarily mean that one child is gifted or that another is delayed. It simply represents that the individual differences exist in the developmental process.

These developmental abilities also tend to build on one another. More advanced skills such as walking usually occur after simpler abilities such as crawling and sitting up have already been achieved. Just because one child began to walk by eleven months of age does not mean that another child is "behind". A child generally begins to walk anytime between the ages of 9 and 15 months, so anytime between those ages is considered normal.

If a child is over 15 months and still cannot walk, the parents might consider consulting with a doctor or developmental specialist to determine if some type of developmental issue is present.

By understanding these developmental milestones, caregivers and health care professionals can keep a watchful eye on children's growth. When potential problems are spotted, earlier interventions can help lead to more successful outcomes.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

8. What are the four basic developmental milestones?

UNIT 14 ENVIRONMENTAL FACTORS INFLUENCING EARLY CHILDHOOD DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Comprehend the nature of endocrinal factors of human development.
- Explain the influences of endocrinal factors on early childhood development.

The prenatal environment: The chemical balance of the mother's body and the presence of conditions or potentially toxic substances that can alter development processes. Examples are the mother's use of drugs or alcohol, viral or bacterial diseases and direct traumatic injury to the fetus.

The physical environment: The air the child breathes and the nutritional value of food the child eats are included. Exposure to conditions that can lead to disease, accident, or injury, including child abuse and neglect.

The social/cultural environment: Consists of the norms, values, belief systems and morals. Standards of behavior that regulate life in the cultural group in which the child is raised.

The learning environment: The degree and type of stimulation available in the child's immediate environment. Sensory input promotes

and shapes cognitive development. Stimulation, in adequate quantity and intensity, promotes establishment of, and "shapes," neural pathways in the brain.

The emotional environment: The nature of the child's interpersonal relationships. The degree of nurturance available to the child. The emotional environment shapes personality and affects the development of self-esteem, identity, trust, the ability to enter into intimate relationships and personal resilience.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

9. What is social/cultural environment?

UNIT 15 ROLE OF PLAY IN ENHANCING DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Define play and its types.
- Justify the role of play in human development.

Play is almost universally recognized as an integral factor in children learning and development. Play is essential for a child's development and for learning life skills. Play is a child's work. Play is important for children's development and for children to bond. It offers a chance to connect with your child. You are your child's first teacher and much of that teaching happens through play. Play helps your child learn the rules of your family and what is expected of him or her. As children grow, play helps them learn how to act in society. Parents need to make time to play with their children. You start to play when your child is an infant. When your baby starts to smile and you smile back, you are engaging in play. Play is directed by the child and the rewards come from within the

child. Play is enjoyable and spontaneous. Play helps your child learn social and motor skills and cognitive thinking. Children also learn by playing with others. You provide the setting for your child to play with others. As your children grow, you provide toys, materials, and sports equipment so that they can play with others. It is important that children learn that play is important throughout life. Play is needed for healthy development for your child. Research shows that 75 percent of brain development occurs after birth. Play helps with that development by stimulating the brain through the formation of connections between nerve cells. This process helps with the development of fine and gross motor skills. Fine motor skills are actions such as being able to hold a crayon or pencil. Gross motor skills are actions such as jumping or running. Play also helps your child to develop language and socialization skills. Play allows children to learn to communicate emotions, to think, be creative and solve problems.

Playing with Your Child

In today's world of balancing work and home schedules, parents find it hard to have quality time with their children. It is essential for parents to make the best use of time they have with their children. Your child needs time with you to relax and play. Playing with children builds lasting bonds. Playing allows parents to appreciate the uniqueness of each child. Playing with children can also be a stress reducer for overworked parents. Laughing and relaxing are important to your own well-being. Try to spend individual time with each of your children. When a parent or sibling plays a board game with a child, shares a bike ride, plays baseball, or reads a story, the child learns self-importance. Your child's self-esteem gets a boost. You are sending positive messages to your child when you spend quality playtime with him. From these early interactions, children develop a vision of the world and gain a sense of their place in it. Family activities are important for the whole family. They help develop strong family bonds, which can last a lifetime. Families who play together are more cooperative, supportive and have better communication. Have movie nights and game nights, or go for walks together. A game night allows parents to teach children to take turns, how to win, how to lose and methods of sequencing events. Listening to music together by singing along, or playing rhythm instruments will help children to listen for and recognize patterns in music, which will assist with math skills in school. If you are a single parent or have only one child, invite family and friends over to play.

Today, children of all ages are exposed to technology such as computers and videos. Children who spend most of their time using technology often are not physically active or using their imagination. You can help your child by reducing screen time. Limit screen time to no more than two hours per day. Make sure your child gets a minimum of one hour of physical exercise every day. You have important roles in play. You can encourage play by providing interesting materials that promote exploration and learning. Playing with your child helps him learn how to manipulate toys and other play materials by modeling your actions.

Types of Play

As your child grows and develops, his or her play evolves. Certain types of play are associated with, but not restricted to, specific age groups.

1. **Unoccupied play:** In the early months of infancy, from birth to about three months, your child is busy in unoccupied play. Children seem to be making random movements with no clear purpose, but this is the initial form of playing.
2. **Solitary play:** From 3 to 18 months, babies will spend much of their time playing on their own. During solitary play, children are very busy with play and they may not seem to notice other children sitting or playing nearby. They are exploring their world by watching, grabbing and rattling objects. Solitary play begins in infancy and is common in toddlers. This is because of toddlers' limited social, cognitive, and physical skills. However, it is important for all age groups to have some time to play by themselves.
3. **Onlooker play:** Onlooker play happens most often during the toddler years. This is where the child watches other children play. Children are learning how to relate to others and learning language. Although children may ask questions of other children, there is no effort to join the play. This type of play usually starts during toddler years but can take place at any age.
4. **Parallel play:** From the age of 18 months to two years, children begin to play alongside other children without any interaction. This is called parallel play. Parallel play provides your toddler with opportunities for role-playing such as dressing up and pretending. It also helps children gain the understanding of the idea of property

right such as “mine.” They begin to show their need of being with other children of their own age. Parallel play is usually found with toddlers, although it happens among any age group.

5. **Associative play:** When your children are around three to four years of age, they become more interested in other children than the toys. Your child has started to socialize with other children. This play is sometimes referred to as “loosely organized play.” Associative play helps your preschooler learn the do's and don'ts of getting along with others. Associative play teaches the art of sharing, encourages language development, problem-solving skills and cooperation. In associative play, groups of children have similar goals. They do not set rules, although they all want to be playing with the same types of toys and may even trade toys. There is no formal organization.
6. **Social play:** Children around the age of three are beginning to socialize with other children. By interacting with other children in play settings, your child learns social rules such as give and take and cooperation. Children are able to share toys and ideas. They are beginning to learn to use moral reasoning to develop a sense of values. To be prepared to function in the adult world, children need to experience a variety of social situations.
7. **Motor - Physical Play:** When children run, jump, and play games such as hide and seek and tag they engage in physical play. Physical play offers a chance for children to exercise and develop muscle strength. Physically playing with your child teaches social skills while enjoying good exercise. Your child will learn to take turns and accept winning or losing.
8. **Constructive Play:** In this type of play, children create things. Constructive play starts in infancy and becomes more complex as your child grows. This type of play starts with your baby putting things in his/her mouth to see how they feel and taste. As a toddler, children begin building with blocks, playing in sand, and drawing. Constructive play allows children to explore objects and discover patterns to find what works and what does not work. Children gain pride when accomplishing a task during constructive play. Children who gain confidence manipulating objects become good at creating ideas and working with numbers and concepts.
9. **Expressive Play.** Some types of play help children learn to express feelings. Here parents can use many different materials. Materials may include paints, crayons, colored pencils and markers for drawing pictures or writing. It can also include such items as clay,

water, and sponges to experience different textures. Beanbags, pounding benches, and rhythm instruments are other sources of toys for expressive play. You can take an active role in expressive play by using the materials alongside your child.

10. **Fantasy Play:** Children learn to try new roles and situations, experiment with languages and emotions with fantasy play. Children learn to think and create beyond their world. They assume adult roles and learn to think in abstract methods. Children stretch their imaginations and use new words and numbers to express concepts, dreams and history.
11. **Cooperative play:** Cooperative play begins in the late preschool period. The play is organized by group goals. There is at least one leader, and children are definitely in or out of the group. When children move from a self-centered world to an understanding of the importance of social contracts and rules, they begin to play games with rules. Part of this development occurs when they learn games such as Follow the Leader, Simon Says, and team sports. Games with rules teach children the concept that life has rules that everyone must follow.

Benefits of Play

There are many benefits to play. Children gain knowledge through their play. They learn to think, remember, and solve problems. Play gives children the opportunity to test their beliefs about the world.

Children increase their problem-solving abilities through games and puzzles. Children involved in make-believe play can stimulate several types of learning. Children can strengthen their language skills by modeling other children and adults. Playing house helps children create stories about their roles, such as “I am the Mom.” They also imitate their own family experiences. This helps children learn about the different roles of family members.

Children gain an understanding of size, shape, and texture through play. It helps them learn relationships as they try to put a square object in a round opening or a large object in a small space. Books, games, and toys that show pictures and matching words add to a child's vocabulary. It also helps a child's understanding of the world.

Play allows children to be creative while developing their own imaginations. It is important to healthy brain development. Play is the first opportunity for your child to discover the world in which he lives.

Play offers a child the ability to master skills that will help develop self-confidence and the ability to recover quickly from setbacks. For example, a child may feel pride in stacking blocks and disappointment when the last block makes the stack fall. Play allows children to express their views, experiences and at times, frustrations.

Play with other children helps a child learn how to be part of a group. Play allows a child to learn the skills of negotiation, problem solving, sharing, and working within groups. Children practice decision-making skills, move at their own pace and discover their own interests during play. Unstructured play may lead to more physical movement and healthier children.

Play is important when your child enters school. Play can assist children in adjusting to a school setting. It enhances children’s learning readiness and their cognitive development by allowing them to move from subject and area without the fear of failure. Playtime in school such as recess time, allows learning and practicing of basic social skills. Children develop a sense of self, learn to interact with other children, to make friends, and the importance of role-playing. Exploratory play in school allows children time to discover and manipulate their surroundings.

Play is an essential and critical part of all children's development. Play starts in the child's infancy and ideally, continues throughout his or her life. Play is how children learn to socialize, to think, to solve problems, to mature and most importantly, to have fun. Play connects children with their imagination, their environment, their parents and family and the world. Parental involvement in a child's world of play is not only beneficial for the child but is extremely beneficial to the parent. Playing with children establishes and strengthens bonds that will last forever. Parent-child play opens doors for the sharing of values, increases communication, allows for teachable moments and assists in problem solving. Playtime provides opportunities for the parent and child to confront and resolve individual differences, as well as family related concerns and issues. Finally, it allows the parent to view the world through the eyes of a child once again.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

10. Name any four types of play?

    ……

    ……

11. Mention a few benefits of play.

    ……

    ……

LET US SUM UP

Child development stages are the theoretical milestones of child development, some of which are asserted in nativist theories. This article discusses the most widely accepted developmental stages in children. There exists a wide variation in terms of what is considered "normal," caused by variation in genetic, cognitive, physical, family, cultural, nutritional, educational, and environmental factors. Many children reach some or most of these milestones at different times from the norm.

Early childhood is the most and rapid period of development in a human life. The years from conception through birth to eight years of age are critical to the complete and healthy cognitive, emotional and physical growth of children.

The rapid development of children's brains begins in the prenatal stage and continues after birth. Although cell formation is virtually complete before birth - a newborn baby has about a 100 billion brain cells - brain maturation and important neural pathways and connections are progressively developed after birth in early childhood. Therefore, early childhood is a period in development where environment actually has an important impact on determining how the brain and central nervous system grows and develops. Environment affects not only the number of brain cells and the number of connections among them but also the way these connections are "wired." The process of eliminating excess neurons and synapses from the dense, immature brain, which continues well into adolescence, is most dramatic in the early years of life, and it is guided to a large extent by the child's sensory experience of the outside world. Scientific evidence suggests that if the brain does not receive the appropriate stimulation during this critical window, it is very difficult for the brain to rewire itself at a later times.

GLOSSARIES

Neonate: A neonate is also called a newborn. The neonatal period is the first 4 weeks of a child's life.

Conception: The action of conceiving a child.

Screening: The testing of a person or group of people for the presence of a disease or other condition.

Play: activity engaged in for enjoyment and recreation, especially by children.

Childhood: Period of the human lifespan between infancy and adolescence, extending from ages 1–2 to 12–13.

Zygote: A zygote, also known as a fertilized ovum or fertilized egg, is the union of a sperm cell and an egg cell.

Embryo: An embryo is the early stage of development of a multicellular organism.

Foetus: A fetus or foetus is the unborn offspring of an animal that develops from an embryo.

ANSWERS TO CHECK YOUR PROGRESS

1. Conception occurs when an egg from the mother is fertilized by a sperm from the father. In humans, the conception process begins with ovulation.
2. A human being has a total of 23 pairs of chromosomes. The first 22 pairs of chromosomes are known as autosomes and determine things such as eye and hair color. The last pair, known as the sex chromosomes, determine a person’s biological sex: females have two X chromosomes, while males have an X and a Y chromosome.
3. Mutation is when a sudden change in a segment of the DNA occurs. Some mutations of the genes can result in conditions such as Down Syndrome or Turner’s Syndrome.
4. A teratogen is any environmental substance or agent—biological, chemical, or physical—that can have a detrimental effect on a developing fetus. Exposure to teratogens during the prenatal stage can significantly raise the risk of birth defects.
5. Robert Guthrie. Maple syrup urine disease, Congenital Adrenal Hyperplasia, Phenylketonuria, Galactosemia, Sickle Cell Anemia.

6. In the test, five things are used to check a baby's health. Each is scored on a scale of 0 to 2, with 2 being the best score:

   Appearance (skin color)

   Pulse (heart rate)

   Grimace response (reflexes)

   Activity (muscle tone)

   Respiration (breathing rate and effort)

7. Grasping reflex occurs as the palmar reflex when a finger is placed in the neonate's palm and the neonate grasps the finger. The palmar reflex disappears around the sixth month. Similarly, the plantar reflex occurs by placing a finger against the base of the neonate's toes and the toes curl downward to grasp the finger. This reflex becomes inhibited around the ninth to tenth month.
8. There are four basic categories for developmental milestones. They are, Physical milestones, Cognitive milestones, Social and emotional milestones, and Communication milestones.
9. **The social/cultural environment**: Consists of the norms, values, belief systems and morals. Standards of behavior that regulate life in the cultural group in which the child is raised.
10. Unoccupied play, Solitary play, Onlooker play, Associative play.
11. There are many benefits to play. Children gain knowledge through their play. They learn to think, remember, and solve problems. Play gives children the opportunity to test their beliefs about the world. Children increase their problem-solving abilities through games and puzzles.

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BLOCK 4 EARLY ADOLESCENCE

Structure

INTRODUCTION

Early adolescence is the first stage and occurs from ages 10 to 14. Puberty usually begins during this stage. People in this stage become aware of their rapidly changing bodies and start to worry about their physical appearance. They might experience shyness, blushing, modesty, and a greater interest in privacy. Early adolescents may feel invincible and start to engage in risky behaviours such as smoking and alcohol use. This period is also characterized by sexual curiosity, which is usually expressed through admiration of celebrities, teen idols, and musicians. Relationships with close friends become more important than family relationships. Early adolescents start to realize that their parents are not infallible and begin to identify their own faults. It is also common for early adolescents to show acting-out behaviours. In this unit we are going to discuss emerging capabilities across domains of physical and social emotional, cognition, metacognition, creativity and ethics, issues related to puberty, gender and development and influence of the environment (social, cultural, political) on the growing child.

OBJECTIVES

After going through this unit, you will be able to:

- define metacognition
- explain various stages physical development
- list the various issues related to puberty
- explicate gender and development
- list out various environmental factors of child growth

UNIT 16 EMERGING CAPABILITIES ACROSS DOMAINS OF PHYSICAL AND SOCIAL EMOTIONAL

OBJECTIVES

After going through this unit, you will be able to:

- Define play and its types.
- Justify the role of play in human development.

16.1 Early Adolescence and Physical Domain

Children who are going through the Early Adolescence stage have many changes occurring to them physically. They are:

1. Going through Puberty
    - Their voice starts changing.
    - They develop sexual organs
        - Body hair growth (All over the body)
2. Rapidly growing
3. Height is changing. Many of those that used to be the smallest
    - Tallest in class.
    - Body proportions change.
    - The girls are starting to get hips, breasts, etc. While the boys are growing taller, stockier and building up more muscle.
4. Having mood swings
5. With all these changes their hormones are going crazy causing

- Many of them to have mood shifts rapidly.
- Time of life where “You just don’t understand” is said more.

6. Searching for their identity
    - Time of life where everyone starts dividing into cliques and you are labeled as something.
    - Jock, nerd, Goth, band geek, etc.
    - People who used to be friends with you may no longer be as there is a cool/uncool split.
    - All want to belong
    - There comes a dissatisfaction with self
    - Hates personality
    - Hates body because of changes it is going through.
    - Developing too fast, developing not fast enough, acne starts occurring, etc
    - Nothing seems right, everything too “babyish”
7. Some feel empowered, as they are older now.
    - Think they can boss others around.
    - Think they can accomplish anything
    - Engaging in risky activities
    - Uses drugs, alcohol, etc.
8. They have more control of motor skills
    - Participating in sports is really being part of a team.

Theorists’ Views

Brofenbrenner can definitely relate to children at this stage of their life. What they are doing and choices they are making are influenced by what their parents want and are planning. But also being even more greatly affected by what their societal culture is telling them. The Exo-system and Macro-system both play a part in all this. This is the time of life where the choices you make affects your future, and depending on what your family and background values; some things will be more important than others. Also you get a clash between what others might

want in your life and what your friends and culture is telling you are cool and fun to do.

Role of Parents and Teachers

It's important for teachers and parents to let children in this age try different things and experiment, allow them to start discovering who they are. It is also important to keep an eye on them as the people they choose to be friends with and the decisions they make at this time will create habits that will structure their life in the years to come. Also this is the time of life where children are very sensitive and words can really destroy any self-worth they have. Its important to not be too critical of appearance, and to keep close watch that they are not being bullied or engaged in some type of self-harm.

16.2 Early Adolescence and Social Domain

Children who are going through the Early Adolescence stage have many changes occurring to them regarding morality:

Many are going through the preconventional stage

Stage 1) Punishment avoidance and obedience

- Early Adolescents make decisions based on what is most beneficial to them
- They know that wrong behavior will be punished and try to not commit any of these.
- They weigh their options regarding consequences
- They go off with what they are told is wrong by adults and parents. Not necessarily analyzing a situation to independently see what is wrong.

Stage 2) Self Interest

- They exchange favors
- They recognize that they can make deals with others to receive the best outcomes

  "You scratch my back and I'll scratch yours"
- They start moving toward sense of what they personally view as right and wrong, not just what they are told
- They will defend what they think is right and want to punish those they feel are committing wrongs.

Others are experiencing the conventional stage

Stage 3) Conformity

- Changing one's own views to match what group they are in or identify with
  - Mostly focusing on pleasing others

    Authority parents, peers, etc; views all play into how the child will act.
- Makes decisions based on how others will perceive them
  - Good boy/good girl, Bad boy/bad girl
- Not making decisions based on what they personally view as right and wrong but what their group, friends, family, etc think

Stage 4) Law & Order

- They look to society to guide them on how to act.
- They see rules as necessary to life and recognize them as set in stone
  - Some are starting to view them as being more flexible and dependent on the situation at hand
- They are heavily influenced by parents as to what is right and wrong

Theorists' Views

Kohlberg believed that early adolescents

- Are starting to develop empathy for people they know and don't know
- That they have a higher moral scale
  - Are less likely to cheat on an exam
  - Less likely to insult or tease others
  - More likely to help others
  - More likely to disobey orders that put others in harm's way
  - Are starting to be governed by emotions
  - Think all rules should be followed

- Believe that distressed individuals are at fault for their circumstances
- Religious beliefs heavily influence them

Role of Parents and Teachers

Parents and Teachers can help children going through these stages by:

1. Involving adolescents in group projects -
    - This will help them get to work with those that are different from them along with giving them the ability to see different perspectives
    - Have them think about society's laws and practices
        - Should all rules really be followed?
        - What are some issues wrong with society today?
        - What rules have the potential to harm others?
        - Etc.
        - Impose discipline when a student is doing something wrong and point out how it hurts others.
    - Moral transgressions:
        - Actions that cause harm or in some way infringes on the needs and rights of others.
    - Conventional transgressions:
        - Actions that violate society's guidelines for socially accepted behavior.

16.3 Early Adolescence and the Emotional Domain Attachment in Early Adolescence Early Adolescents:

1. Expect parents to keep checks on them, celebrate their successes and be there when needed. Some remain attached to parents and siblings
2. Become increasingly close to friends and romantic partners.
3. At this age peers offer reassurance to one another when times are tough, providing a new kind of safe haven, one that permits equal participation.

4. Even though they depend to their parents, family relationship changes. They connect more with peers and prepare for their inevitable departure from the family nest.
5. Start hanging out more with peers

Theorists' Views

Erikson and Attachment

1. According to Erikson, early adolescence experience identity versus role confusion in the form of psychosocial stages.
    - As they confront transition from childhood to adulthood, they actively engage in soul searching related to who they are and what they believe in and where they are going.
        - Get mixed feelings about specific ways in which they fit into the society.
        - For example, trying several distinct sports and hobbies, and learning about the views of different political group.
2. They may lose confidence if they see themselves not fitting in with their peers.
3. They also experience Industry versus Inferiority
    - Children seek approval of adults for academics and athletics.
    - They want praise for their new skills
4. There is frequent fluxes in mood
    - They are going through puberty and are having hormonal changes along with stressful experiences
5. They are trying to regulate emotions
    - Some will manifest what they are feeling, while others will hide it.
    - Some manifestation is good, like talking it out. Some others are bad, such as overt behaviors like fighting with others.

Role of Parents and Teachers

In order for teachers and parents to better help students:

- They should be supportive listeners

- Make sure their moodiness is at the right level
- Let them know what behaviors are what for what place in time
- Speak to parents or school consoler about overt behaviors
- Involve them in sports or clubs so they find their “fit”

Major Milestones of Adolescence

Physical domain

1. rapid increase in height and weight, changing the requirements for food and sleep
2. for boys, increase in muscle tissue, decrease in body fat
3. for girls, increase in both muscle tissue and body fat
4. influx of hormones stimulates growth and functioning of reproductive organs
5. significant changes in brain regions associated with impulse control, decision-making, and ability to multitask

Cognitive domain

1. emergence of new forms of mental operations associated with scientific reasoning abilities
2. increased ability to think hypothetically
3. increase in working memory enables higher-level problem-solving strategies
4. increased decision-making skills
5. increased ability to use reasoning in making moral judgments

Social and emotional domain

1. compared to childhood, daily experience of positive emotions decreases and daily experience of negative emotions increases
2. increased ability to regulate emotions
3. new bases for friendships, which, ideally, balance intimacy and autonomy needs
4. peer groups provide opportunities for exploring identity possibilities
5. gender-typed behaviors increase
6. increase in parent-child conflict in some but not all domains
7. emergence of a more coherent, stable sense of identity
8. emergence of sexual orientation and ethnic identities

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

1. Mention any four changes occurring to children going through the early adolescence stage.

UNIT 17 EMERGING CAPABILITIES ACROSS DOMAINS RELATED TO COGNITION, METACOGNITION, CREATIVITY AND ETHICS

OBJECTIVES

After going through this unit, you will be able to:

- Define cognitive processes.
- Describe creativity in human development.
- Explain ethics.

Metacognition

As children move toward adolescence, they become increasingly able to think about and regulate their own thoughts and cognitive activities. This process is called metacognition (Vrugt & Oort, 2008). Metamemory specifically refers to the understanding of memory, how it works, and how to use it effectively.

To understand metacognition, think about what happens when you are studying for an exam for one of your courses. You might start by assessing how much you already know about a subject. That helps you determine how much time it will take you to prepare. You don't want to make a mistake at this step by underestimating how much work you need to do. Next you can consider which strategies you will use to prepare for your exam. You would most likely choose a different approach when studying for an English Literature exam than for a Chemistry final. You continue to evaluate your level of understanding as your studying progresses, to gauge how much more you need to do or to reevaluate the strategies you are using. After you get your grade, you can evaluate the effectiveness of the strategies you used, so the next time you can prepare more effectively or more efficiently.

Each decision you make when directing your own learning is an indication of your level of understanding of how cognition and memory work (Winn, 2004). As adolescents get older they get better at evaluating their own learning accurately (Weil et al., 2013). Studies with students from middle schools (Gaskins & Pressley, 2007) and college (Cano & Cardelle-Elawar, 2004) have shown that students' performance can be improved when they better understand how their cognitive processes work.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

2. What is metacognition?

……

……

Creativity

Creativity is central to the ability to move beyond what we know to the realm of possibility. While people of any age can be creative, some of the cognitive changes during adolescence are abilities particularly important for creativity. Being cognitively flexible, being able to think through a task and anticipate the outcome, and thinking hypothetically and abstractly are all essential elements of the creative process. Certain changes in the brain allow, more flexible and creative thinking (Kleibeuker et al., 2013).

Where does creativity fit into our understanding of intelligence? Is it an independent characteristic, or is it closely related to intelligence so that people who are high (or low) on one are also high (or low) on the other? A substantial amount of research has exam- ined the relationship between creativity and intelligence, and a number of studies have found that the correlation is positive but moderately low (Kim, 2005; Wallach & Kogan, 1965). Although a certain amount of intelligence is necessary to be creative, high intelligence is not sufficient by itself.

What do we mean when we talk about creativity? In the 1950s J. P. Guilford proposed that creativity is based on an ability to see multiple solutions to a problem.That is, the ability to use divergent thinking. In contrast, many academic situations require that we come up with one correct solution, which is the result of convergent thinking. Robert Sternberg (2003a) has defined creative thinking as "thinking that is novel and that produces ideas that are of value" (pp. 325–326), and in this

sense, we need both divergent thinking to produce new ideas and convergent thinking to narrow the alternative ideas down to the one that is most practical or likely to succeed.

According to Guilford (1950), able to think divergently requires fluency, which is the ability to find multiple solutions relatively quickly and flexibility, which is the ability to consider multiple alternatives or shift your mind-set; and originality, which is the ability to come up with solutions that are unique. Most of the tests used to measure creativity are based on these ideas.

We need to encourage teens to be creative, to experiment and try new things. They have to learn about to think about situations in fresh ways without being bound to old practices and ideas. We must allow them to try and fail without becoming discouraged. As adults, we can also provide a stimulating environment that exposes them to new experiences, and we can urge them to find a passion and follow it.

These are suggestions Robert J. Sternberg makes and he believes that teachers can use in their classrooms to encourage creative thinking.

Redefine the problem	Don't necessarily accept things just because other people do. Allow yourself to see things differently.
Analyze your own ideas	Critique your own ideas and decide whether they are valuable and worth pursuing or not
Sell your ideas	Just generating creative ideas is not enough. Because they challenge accepted ways of thinking, they must be "sold" to others.
Remember that knowledge is a double-edged sword	You cannot be creative without being knowledgeable, but existing knowledge also can hamper or hinder creative thinking.
Surmount obstacles	You need to be ready to "defy the crowd" and overcome these obstacles.
Take sensible risks	Rather than providing a safe and conventional answer, be willing to fail by trying new things.
Be willing to grow	Don't become so invested in your own original creative ideas that you are afraid to branch out or explore new

	ones.
Believe in yourself	Maintain a sense of self-efficacy even when no one else seems to believe in you.
Tolerate ambiguity	Be willing to tolerate some level of uncertainty while you are waiting to see whether your ideas will pan out or not.
Find what you love and do it	You are likely to be most creative when doing things you really care about.
Allow time	Realize that it takes time for incubation, reflection, and selection to develop a creative idea.
Allow mistakes	Recognize that mistakes will happen, but use them as an opportunity to learn.

Ethics

Throughout the course of puberty, teens' moral development advances just as surely as their bodies are changing. From the start of early adolescence (around 11-13 years old), teens begin to think abstractly. This new ability leads them to begin to question rules and standards, whether from school, religious authorities or parents, which they had previously easily accepted. By middle adolescence (around 14-18 years old), teens have begun to develop their own moral code. Their behaviour early and during middle adolescence may not be consistent with some of their moral conclusions. This isn't hypocrisy. They really just haven't made the connection yet. It's the reason they may genuinely believe smoking is bad, but they'll try it anyway. They will usually be more likely to match their behavior to their beliefs by the end of this period. As they move to late adolescence (around 18-21 years old), they will begin to develop their moral ideas about the world, thinking about such concepts as justice, peace and patriotism.

This progression was formally codified by Lawrence Kohlberg, a 20th Century developmental theorist who identified six stages of moral development. According to Kohlberg, early adolescents have usually reached the third stage of moral development. The Conventional Level of interpersonal cooperation. The Conventional Level means they understand morality as determined by social convention and wish to conform to be a "good person." Stage four is the social-order-maintaining phase of the Conventional Level. This means that teens

begin to assess morality by what is best for the most people. As teens get older, they enter the Principled Level of morality, which includes the fifth stage of moral development which is the social-contract orientation. During this stage, teens start looking outside their needs to assess morality. They also start to think more abstractly about morals, not just accepting rules because they are social norms, but assessing a moral principle through the lens of their values. Lastly, the sixth stage of moral development, also part of the Principled Level, is when teens begin contemplating high-level abstract concepts like respect, equality and justice. This sixth phase is called the universal ethical principle orientation.

Levels	**Stages**	**Description (the basis for moral judgment)**
I. Preconventional	1. Heteronomous morality	Obey the word of authorities and fear punishment
	2.Individualism, instrumental purpose, and exchange	Be fair; take everyone's self-interest into account
II. Conventional	3. Mutual interpersonal expectations and conformity	Act so as to be seen as "good" by those around you, in accordance with their expectations, including caring, loyalty, and gratitude
	4. Social system and conscience	Consider the good of society as a whole, maintaining order for the good of all
III. Postconventional	5. Social contract and individual rights	Understand that the rules of society may differ for different groups and that some values, such as life and liberty, are universal
	6. Universal ethical principles	Follow self-chosen principles of equal rights even when they conflict with society's rules

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

3. What is creativity according to Guilford?

……
……

4. How many stages of moral development was identified by Lawrence Kohlberg?

……
……

UNIT 18 ISSUES RELATED TO PUBERTY

OBJECTIVES

After going through this unit, you will be able to:

- Define puberty.
- Describe issues related to puberty.

Adolescence is the period of development that begins at puberty and ends at emerging adulthood. The typical age range is from 12 to 18 years, and this stage of development has some predictable physical milestones.

Physical Changes of Puberty

Puberty is the period of several years in which rapid physical growth and psychological changes occur, culminating in sexual maturity. The onset of puberty typically occurs at age 10 or 11 for females and at age 11 or 12 for males, Females usually complete puberty by ages 15 to 17, while males usually finish around ages 16 to 17. Females tend to attain reproductive maturity about four years after the first physical changes of puberty appear. Males, however, accelerate more slowly but continue to grow for about six years after the first visible pubertal changes. While the sequence of physical changes in puberty is predictable, the onset and pace of puberty vary widely. Every person's individual timetable for

puberty is different and is primarily influenced by heredity. However environmental factors, such as diet and exercise also exert some influence.

Hormonal Changes

Puberty involves distinctive physiological changes in an individual's height, weight, body composition and circulatory and respiratory systems. During this time, both the adrenal glands and the sex glands mature processes known as adrenarche and gonadarche, respectively.

These changes are largely influenced by hormonal activity. Hormones play an *organizational role* (priming the body to behave in a certain way once puberty begins) and an *activational role* (triggering certain behavioral and physical changes). During puberty, the adolescent's hormonal balance shifts strongly towards an adult state. The process is triggered by the pituitary gland, which secretes a surge of hormonal agents into the blood stream and initiates a chain reaction.

Sexual Maturation

It is this stage in life in which a child develops secondary sex characteristics. *Primary sex characteristics* are organs specifically needed for reproduction, like the uterus and ovaries in females and the testes in males. *Secondary sex characteristics,* on the other hand, are physical signs of sexual maturation that do not directly involve sex organs. In females, this includes development of breasts and widening of hips. In males it includes development of facial hair and deepening of the voice. Both sexes experience development of pubic and underarm hair, as well as increased development of sweat glands.

The male and female gonads are activated by the surge of hormones, which puts them into a state of rapid growth and development. The testes primarily release testosterone and the ovaries release estrogen. The production of these hormones increases gradually until sexual maturation is met. Girls experience menarche, the beginning of menstrual periods, usually around 12–13 years old and boys experience spermarche, the first ejaculation, around 13–14 years old. Facial hair in males typically appears around age 14.

Physical Growth

The adolescent growth spurt is a rapid increase in an individual's height and weight during puberty resulting from the simultaneous release of growth hormones, thyroid hormones and androgens. Males experience their growth spurt about two years later than females. The accelerated

growth in different body parts happens at different times. But for all adolescents it has a fairly regular sequence. The first places to grow are the extremities (head, hands, and feet), followed by the arms and legs and later the torso and shoulders. This non-uniform growth is one reason why an adolescent body may seem out of proportion. During puberty, bones become harder and more brittle.

Before puberty, there are nearly no differences between males and females in the distribution of fat and muscle. During puberty, males grow muscle much faster than females, and females experience a higher increase in body fat. The ratio between muscle and fat in post-pubertal males is around 1:3, while for males it is about 5:4. An adolescent's heart and lungs increase in both size and capacity during puberty; these changes contribute to increased strength and tolerance for exercise.

Brain Development

The adolescent brain also remains under development during this time. Adolescents often engage in increased risk-taking behaviors and experience heightened emotions during puberty; this may be due to the fact that the frontal lobes of their brains which are responsible for judgment, impulse control, and planning are still maturing until early adulthood.

Effects of Physical Development

Because rates of physical development vary so widely among teenagers, puberty can be a source of pride or embarrassment. Early maturing boys tend to be physically stronger, taller and more athletic than their later maturing peers. This can contribute to differences in popularity among peers, which can in turn influence the teenager's confidence. Some studies show that boys who mature earlier tend to be more popular and independent but are also at a greater risk for substance abuse and early sexual activity. Early maturing girls may face increased teasing and sexual harassment related to their developing bodies, which can contribute to self-consciousness and place them at a higher risk for anxiety, depression, substance abuse, and eating disorders. Girls and boys who develop more slowly than their peers may feel self-conscious about their lack of physical development, Some research has found that negative feelings are particularly a problem for late maturing boys, who are at a higher risk for depression and conflict with parents and more likely to be bullied.

Issues Related To Puberty

Puberty now creates two problems in one. First, it creates a process problem. How to manage the physical changes that are besetting their bodies. This is the problem of self-consciousness. Second problem is, it creates an outcome problem; how to act young manly or young womanly. This is the problem of sex role definition.

We will start with the problem of self-consciousness. For most young people, puberty catches them at a bad time - during the early adolescent years (around ages 9 - 13) when they are separating from the shelter of childhood and begin striving for social belonging and place among their society of peers. Already feeling adrift from family and at sea in this brave new world of more social independence, puberty demonstrates how they are also out of control of their body.

Developmental insecurity and early adolescence go hand in hand. For most young people, puberty is the enemy of self-esteem. It changes how they look at a time when physical appearance becomes more important for social acceptance and social standing.

As body shape and characteristics alter, they feel more vulnerable on that account, whether they are physically maturing too fast or not fast enough. This is the period when self-examination is microscopic, when any new blemish can be a source of misery, when it takes much longer to "get ready" to go out, when what to wear and how to groom absorb protracted attention.

At home, parents must remember that the changes of puberty are no laughing matter. The rule for parents is there but must be no teasing, no joking, no making fun of self-preoccupation, physical appearance, bodily change, or choice of dress. There is enough of this torment from peers who are all suffering from similar insecurities themselves.

Early adolescence is an age of intolerance, where perceived differences or departures from the dominant or desired norm are not treated kindly. Now a young woman or young man can be teased and picked on for not looking womanly or manly enough. A painfully self-conscious early adolescent can take this social cruelty very personally. "What's wrong with me?" "I hate how I look!" "I'll never fit in!" Self-esteem can plummet when being teased causes a young person to become self-rejecting.

There can be a vulnerability to rumoring that can come from appearing so mature so young - peers gossiping that, “because you look so sexually mature you are prepared to act that way. So now you have a sexual social reputation”.

At this juncture, parents need to help the young person evaluate this cruelty for what it is. "Being teased or rumoured this way shows nothing wrong with you, but it shows a lot wrong about them. They are ridiculing what they fear being attacked about themselves, and they are choosing to at mean. This mistreatment is about them, not about you."

Now consider the problem of sex role definition. While adolescence begins growth toward more independence, puberty adds another dimension to this journey, is noticed the need to claim one's young manhood or young womanhood. But where are young people supposed to learn these definitions?

Certainly there are models in the family, if older siblings and parents are available to provide salient examples to follow. Even so, these are not the most commanding images at hand.

It is the cultural ideals for being a man and being a woman that young people find most alluring. Ideals portrayed in the images and messages and icons that media advertising and entertainment constantly communicate.

To approximate these young manly and young womanly attributes means incorporating some of them into one's desired appearance. So come puberty, the social/sexual stereotypes kick in as young women worry about weight and thinning down their bodies by dieting, and young men worry about muscle size and strengthening their bodies by lifting weights. Now social role definition is added to the mix. According to stereotype, the male is encouraged to be s sexual aggressor and the female is encouraged to be a sexual attractor. After puberty, young women who are not deemed attractive enough by their peers and young men who are not deemed aggressive enough by their peers, can feel punished by being told and shown how they are not measuring up girls for being too fat and boys for being too weak.

Hopefully, at this juncture, parents can help their son or daughter escape the pressure of these dehumanizing sex role definitions by explaining a more healthy way to grow.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

5. At what age does puberty occur generally?

……

……

6. What are secondary sex characteristics?

……

……

UNIT 19 GENDER AND DEVELOPMENT

OBJECTIVES

After going through this unit, you will be able to:

- Describe gender and its relation to human development.
- Relate gender and society.

Gender is a complex variable that is a part of social, cultural, economic and political contexts. It is also relevant for the work of civil society movements. Gender refers to socially constructed differences between men and women. Whereas, Sex refers to biological differences between men and women. Being socially constructed, gender differences vary depending on age, marital status, religion, ethnicity, culture, race, class/caste and so on. Sexual differences vary little across these variables.

Development analysts have recognized now for several decades the need to ensure that gender is examined and integrated into development projects. In integrating gender into development, practitioners are responding to the priority needs of women and men and being aware of what benefits or adverse effects could impact either.

Why is Gender Relevant for Development?

In taking account of gender, development practitioners and social movement activists are looking at disparities that exist in male and female rights, responsibilities, access to and control over resources and voice at household, community and national levels. Men and women often have different priorities, constraints and preferences with respect to development and can contribute to, and be affected differently by, development projects and campaigning interventions. To enhance effectiveness, these considerations must be addressed in all program and campaign design and interventions. If such considerations are not addressed thoughtfully and adequately, these interventions can lead not only to inefficient and unsustainable results, but may also exacerbate existing inequities. Understanding gender issues can enable projects to take account of these and build in capacity to deal with inequitable impacts and to ensure sustainability.

When we talk about Gender Equality, we are referring to a combination of legal equality and equal opportunities including opportunities to speak

out. More often, this is about making better opportunities in all of these areas for women.

Women's rights are protected by many international instruments and laws. The best known is probably the Convention for Elimination of Discrimination Against Women (CEDAW, 1979). This was by the UN Treaty adopted by the General Assembly in 1979 and signed initially by 64 states in July the following year. An optional protocol was later developed setting out a mechanism by which states would be held accountable to the treaty. There have been subsequent international declarations and pledges which have been used as bench marks to measure progress in relation to specific women's issues. These include the Beijing Declaration and Platform for Action (1995), and the Millennium Development Goals (2001) which include gender considerations in almost half of the clauses. The MDGs have been mutually reinforcing progress toward one goal affects progress toward the others. But, the third goal addresses gender equality specifically. The successor Sustainable Development Goals (SDGs), due to be adopted in 2015 as part of a broad Sustainable Development Agenda, include achieving 'gender equality and empower all women and girls' as the proposed Goal 5.

Historical trends in integrating gender into development

An early approach involved targeting women by project design and interventions which focused on women as a separate group. This was commonly referred to as WID (Women in Development). Critics of this approach pointed out that this did not address men and a later model usually referred to as GAD (Gender and Development) concentrated more on project design and interventions that were focused on a development process that transforms gender relations. This aimed to enable women to participate on an equal basis with men in determining their common future. The Gender Equality approach is therefore about men and women. Thus it is a more comprehensive approach to analysis and design of development interventions because it takes into account the situation and needs of both men and women. It aims to involve both women and men in addressing their development problems, to reform institutions to establish equal rights and opportunities, and to foster economic development which strengthens equal participation. Such an approach aims to redress persistent disparities in access to resources and the ability to speak out.

Masculinities

It has also been rganizati by specialists and activists in this field that the behaviour of men needs to be addressed in the context of gender work. Unless men challenge themselves as to the ways in which their own behaviour, attitudes and upbringing perpetuates gender inequality, gender injustice and gender violence, nothing will change. For more than two decades now, a growing number of programmes addressing these issues have been developed in various parts of the world and the learning shared has adapted to new contexts. Among the most well known, have been the programmes of Puntos de Encuentro and Cantera in Nicaragua and its programmes on male behaviour change. Another example, Stepping Stones, a small group intervention using participatory learning to help improve sexual health, began in Uganda. But, this was adapted for different countries across sub Saharan Africa including Gambia, Ghana, Kenya, South Africa, Tanzania and Zambia, as well as for the Philippines. Its community training package "aims to encourage communities to question and rectify the gender inequalities that contribute to HIV/AIDS, gender based violence and other issues" and again rganiz on behaviour change.

Gender and social movements

Throughout the globe people are rganizati both to challenge and end gender injustice in all areas of our social, economic, political, and cultural lives. To be successful, however, these struggles need to include and prioritise gender equality within their own rganizational structures as well as being part of the analysis and methodology for change. This is a deeply political issue at a variety of levels. Although social movements are trying to address this, activists still come up against strong resistance to changing gendered politics and practices even within the contexts of movements and allied rganizationa. Nevertheless, when it comes to making an impact on transforming gender power relations, social movements are crucial.

Integrating gender perspectives into social movements and activism is not just about 'including' women or 'thinking about' men and gender minorities. It means considering what a gendered politics provides in terms of alternative ways of being, seeing and doing that in themselves serve to transform patriarchal power relations. Women's rights and gender justice issues have been approached in a variety of ways by different social movements, but some common parameters can be outlined. These facilitate a supportive environment for gender-just

movement building. For example, affirming the importance of tackling gender inequality and patriarchal power as an integral component of justice and naming this as an explicit priority. Engaging positively in internal reflection and action on women's rights and gender justice, providing support for women's leadership and participation in all aspects of social movements, tackling gender based violence and harassment. Ensuring equal role/rank distribution in rganizational structures, making sure participation is equal, taking account of caring for family members, taking account of the fact that women may be targeted in retaliation by those in society who feel threatened by gender justice as a change to traditional roles.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

7. Differentiate sex from gender.

UNIT 20 INFLUENCE OF THE ENVIRONMENT (SOCIAL, CULTURAL, POLITICAL) ON THE GROWING CHILD

OBJECTIVES

After going through this unit, you will be able to:

- Comprehend the relationship of environmental factors in human development.
- Discuss the influence of social, cultural and political environment of the growing child.

Influence of Social Environment

An individual's social environment, including the social relationships an individual makes within it, can also have a profound impact on the quality of parenting, which in turn affects a child's health development and future achievements. Inclusive social environments which provide support to parents have been shown to enhance parents'

capacity to care for their children and in doing so promote better child health and development. They have also been shown to have a positive effect on the family system and families who are well connected to networks of supportive individuals are better able to cope with factors which may negatively influence their health.

What are social environments?

The social environment refers to an individual's physical surroundings, community resources and social relationships.

Physical environment

The physical surrounding of a social environment include housing**,** facilities for education, health care, employment and open space for recreation. The nature of physical surroundings (including their quality, e.g. the extent to which open spaces are clean and buildings maintained) can influence the quality of parenting and in turn affect the health and wellbeing of children within that environment.

Community resources

The availability of community resources refers to community structures (e.g. political governance) and organisations**,** knowledge and support within the community. The extent to which resources are available in the community influences the health of individuals living within it. Living in a socio-economically deprived, underdeveloped community, has a negative impact on child development.

Social relationships

Social relationships are the interactions between various individuals or groups. In every society, individuals develop relationships with other individuals to enable them to achieve their goals. These relationships may be entered into consciously or unconsciously (e.g. a friendly chat whilst waiting in a queue or a meeting with a child's teacher). The obligations, expectations, trust and norms of any relationship influence the extent to which these relationships enable an individual to develop "social capital". Social capital is a strong, supportive network of individuals who provides access to emotional and physical resources which an individual needs to fulfill their goals. The social relationships are collectively referred to as the social network. Good social networks are associated with greater levels of social

cohesion, informal care and enforcing healthy behaviours such as not smoking and safe sexual practices.

The importance of positive social environments and relationships for parents in which a child's social environment is largely dictated by where their parents live and send them to school. In turn, the social environment which largely determines who children form social relationships with and the quality of those social relationships, as many of the relationships children form are within their family or neighbourhood. As such, parents' decisions (or, on the contrary, lack of decision making power) about where to live, work and school can markedly affect the health and wellbeing of their children.

Influence of the Cultural Environment

With multiculturalism spreading through the world, many parents may begin to wonder about what kind of influence their family, ethnic or national culture will have on their growing adolescents. While puberty and the issues of becoming an adult are similar for all teens, what they implicitly emphasize in how they grow, differs based on culture. Knowing these differences can help parents understand what their children are going through.

Independence vs. Dependence

When a child grows up in a culture or household that gives a certain amount of freedom, he expects that the given amount of freedom is customary in society. Because of this, parents often notice differences between cultures. In that, children from some cultures are clearly more independent while others are more reliant on their families. One clear example of this is how Western cultures give many freedoms to growing teens, allowing them to drive and hold part-time jobs, activities that do not happen until much later in Eastern countries. The culture a child grows up in can have an influence on how quickly he becomes independent.

Moral Differences

The parents of adolescents have the main responsibility of teaching children ethics. Scholars of adolescent behavior and authors of "Family and Peer Influences on Adolescent Behavior and Risk-Taking," Nancy Gonzales and Kenneth Dodge, note that while much of adolescent development happens outside the home, the culture of the family instills upon children their developmental roots. Parents coming from difference cultures emphasize different value sets and therefore teach their children different moral standards. For example, because honesty is an

important concept in the West, American parents urge their children not to lie, even in situations where lying would be beneficial. On the contrary, parents from East Asia tend to focus on creating a sense of both social and family harmony. These parents are more willing to overlook lies, provided those lies contribute to harmony, such as in white lies that avoid hurting others' feelings. As adolescents grow up in different cultures, their moral standards solidify differently.

Effects on the Ego

Without culture, there is no right or wrong as to whether a child should be proud or humble. Culture is part of the reason some adolescents are seen by their peers as arrogant or timid. This difference stems not from the idea of respect, but from where respect should be replaced. For example, Hispanic families tend to raise their adolescences as strong-willed, standing up for themselves when needed. They instill a sense of self-pride in their children. However, other cultures, such as Japanese culture, deemphasize the pride of the individual in favor of pride for the group. Thus, to Hispanic children, Japanese children might be considered timid. On the other hand, Japanese children might consider Hispanic children to be haughty.

Cultural Confusion

Considering that the adolescent years are a period of finding one's self-identity, adolescents from a non-mainstream culture may find it more difficult to identify themselves. On the one hand, adolescents identify with their families, which may be a non-mainstream culture. On the other hand, adolescents also identify with their peer group, which is often a part of the mainstream culture. At this life stage, individual differences become apparent, especially with regard to cultural differences, making the self-identification period even more difficult for foreign adolescents growing up abroad.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

8. What is a social environment?

……

……

LET US SUM UP

Early adolescence might be broadly considered to stretch between the ages of 10 and 14. It is at this stage that physical changes generally commence, usually beginning with a growth spurt and soon followed by the development of the sex organs and secondary sexual characteristics. These external changes are often very obvious and can be a source of anxiety as well as excitement or pride for the individual whose body is undergoing the transformation. The internal changes in the individual, although less evident, are equally profound. Recent neuroscientific research indicates that in these early adolescent years the brain undergoes a spectacular burst of electrical and physiological development. The number of brain cells can almost double in the course of a year, while neural networks are radically reorganized, with a consequent impact on emotional, physical and mental ability. The more advanced is the physical and sexual development of girls who enter puberty on an average of 12–18 months earlier than boys. This is mirrored by similar trends in brain development. The frontal lobe, the part of the brain that governs reasoning and decision-making, starts to develop during early adolescence. Because this development starts later and takes longer in boys, their tendency to act impulsively and to be uncritical in their thinking lasts longer than in girls. This phenomenon contributes to the widespread perception that girls mature much earlier than boys.

It is during early adolescence that girls and boys become more keenly aware of their gender than they were as younger children. They may make adjustments to their behaviour or appearance in order to fit in with perceived norms. They may fall victim to, or participate in, bullying, and they may also feel confused about their own personal and sexual identity. Early adolescence should be a time when children have a safe and clear space to come to terms with this cognitive, emotional, sexual and psychological transformation, unencumbered by engagement in adult roles and with the full support of nurturing adults at home, at school and in the community. Given the social taboos often surrounding puberty, it is particularly important to give early adolescents all the information they need to protect themselves against HIV, other sexually transmitted infections, early pregnancy, sexual violence and exploitation. For too many children, such knowledge becomes available too late, if at all, when the course of their lives has already been affected and their development and well-being undermined.

GLOSSARIES

Cognition: It is a term referring to the mental processes involved in gaining knowledge and comprehension.

Metacognition: Thinking about one's thinking. More precisely, it refers to the processes used to plan, monitor, and assess one's understanding and performance.

Puberty: The time in life when a boy or girl becomes sexually mature. It is a process that usually happens between ages 10 and 14 for girls and ages 12 and 16 for boys.

Gender: Either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones.

Adolescence: The period following the onset of puberty during which a young person develops from a child into an adult.

Creativity: It is central to the ability to move beyond what we know to the realm of possibility.

Ethics: Moral principles that govern a person's behaviour or the conducting of an activity.

Hormones: A regulatory substance produced in an organism and transported in tissue fluids such as blood or sap to stimulate specific cells or tissues into action.

ANSWERS TO CHECK YOUR PROGRESS

1. a. going through puberty b. rapidly growing c. having mood swings d. searching for their identity
2. As children move toward adolescence, they become increasingly able to think about and regulate their own thoughts and cognitive activities. This process is called metacognition.
3. According to Guilford (1950), being able to think divergently requires fluency, which is the ability to find multiple solutions relatively quickly, flexibility, which is the ability to consider multiple alternatives or shift your mind-set; and originality, which is the ability to come up with solutions that are unique.
4. Kohlberg identified six stages of moral development
5. Puberty is the period of several years in which rapid physical growth and psychological changes occur, culminating in sexual

maturity. The onset of puberty typically occurs at age 10 or 11 for females and at age 11 or 12 for males; females usually complete puberty by ages 15 to 17, while males usually finish around ages 16 to 17.

6. *Secondary sex characteristics* are physical signs of sexual maturation that do not directly involve sex organs. In females, this includes development of breasts and widening of hips, while in males it includes development of facial hair and deepening of the voice. Both sexes experience development of pubic and underarm hair, as well as increased development of sweat glands.
7. Gender is a complex variable that is a part of social, cultural, economic and political contexts. It is also relevant for the work of civil society movements. Gender refers to socially constructed differences between men and women. Whereas, Sex refers to biological differences between men and women. Being socially constructed, gender differences vary depending on age, marital status, religion, ethnicity, culture, race, class/caste and so on. Sexual differences vary little across these variables.
8. The social environment refers to an individual's physical surroundings**,** community resources and social relationships**.**

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BLOCK 5 TRANSITION INTO ADULTHOOD

Structure

INTRODUCTION

The transition to adulthood is a critical stage of human development during which young people leave childhood behind and take on new roles and responsibilities. It is a period of social, psychological, economic, and biological transitions. For many young people it involves demanding emotional challenges and important choices. To a large degree, the nature and quality of young people's future lives depend on how successfully they negotiate through this critical period. Yet in many developing countries, it is a stage of life that has only recently begun to receive focused attention.

The challenges for young people making the transition to adulthood are greater today than ever before. Globalization, with its power to reach across national boundaries and into the smallest communities, carries with it the transformative power of new markets and new technology. At the same time, globalization brings with it new ideas and lifestyles that can conflict with traditional norms and values. And while the economic benefits are potentially enormous, the actual course of globalization has not been without its critics who charge that, to date, the gains have been very unevenly distributed. This generates a new set of problems associated with rising inequality and social polarization. Regardless of how the globalization debate is resolved, it is clear that as broad global forces transform the world in which the next generation will live and work, the choices that today's young people make or others make on

their behalf will facilitate or constrain their success as adults. Traditional expectations regarding future employment prospects and life experiences are no longer valid.

Concerns about how global forces are altering the passage into adult-hood are all the more urgent because of the changing demographic profile of many developing countries. The acceleration of these global changes has coincided with unprecedented growth in the size of the population of young people in developing countries. By 2005, the total number of 10-24-year-olds was estimated to have reached 1.5 billion, constituting nearly 30 percent of the population of these regions and 86 percent of all young people in the world. Each subsequent cohort of young people in the developing world is projected to continue to increase until 2035 as rapid growth in Africa and parts of Asia counteracts some slow declines in absolute numbers elsewhere in Asia and in Latin America and the Caribbean.

Recognizing the need to learn more about this crucial period of life, the National Research Council convened a panel of experts to examine how the transition to adulthood is changing in developing countries and what are the implications of these changes might be for those responsible for designing youth policies and programs, in particular and those affecting adolescent reproductive health.

According to the panel's findings, important transformations in young peoples' lives are under way. In much of the developing world, adolescence is a stage of life that is gaining in significance. In the past, young men and women tended to move directly from childhood to adult roles. But today the interval between childhood and the assumption of adult roles is lengthening. Compared to the situation 20 years ago, young people are

- entering adolescence earlier and healthier,
- more likely to spend their adolescence in school,
- more likely to postpone entry into the labour force, and
- more likely to delay marriage and childbearing.

As a result of these changes, on an average, young people in the developing world now have more time and opportunities than ever before to acquire the information and skills necessary to become effective participants in decisions about their own lives and futures.

These broad statements capture only the average tendencies for young people in developing countries, which tend to be statistically dominated

by trends in developing Asia, where 70 percent of young people in developing counties live, 42 percent in India and China alone. Differential rates of change have led, in some cases, to growing differences among adolescents within and across countries. As some young people experience progress while others are left behind. Over the past 20 years, economic growth rates in Latin America and the Caribbean and in sub-Saharan Africa have diverged negatively from economic growth rates in developed countries. While growth rates in East and South Asia, where the majority of young people live, have converged toward economic growth rates in developed countries.

These very different circumstances across regions mean that the experiences of today's young people, as well as the implications of globalization for them, vary enormously. And even in countries in which the rate of economic growth has been very high, for some young people, particularly those in rural areas, the outward patterns and rhythms of life may appear to be largely unaffected.

Because of rapid population growth, young people who are poor are about as numerous today as they were in the past despite declining poverty rates. Current estimates imply that roughly 325 million young people in developing countries are growing up on less than $1 a day. Furthermore, the continuing growth in the absolute numbers of young people as well as the lengthening period of years spent unmarried (and in many cases sexually active) ensure a rapid and continuing growth in young peoples' need for education, as well as for reproductive and other health services. Further challenges include relatively poor learning outcomes in school among enrolled students and persistent disadvantages for young women, young people from low-income families and young people living in the least developed countries.

Sub-Saharan Africa is a region of special concern. Not only are poverty rates rising and population growth rates proceeding at unprecedented levels, but also the risks of HIV/AIDS for young people are very high and increasing. Furthermore, recent data on school participation suggest that, in some settings during the 1990s, school attendance rates for boys fell as the prevalence of child labour rose. Growing pressures on school systems may further compromise school quality, which is already poor. While fewer African young people marry or bear children during adolescence relative to previous generations. Many lack opportunities to use this lengthening adolescent phase of their lives to acquire needed education and training.

OBJECTIVES

After going through this unit, you will be able to:

- define wellbeing
- explain various stages of identity formation
- list the various important factors of self concept
- explicate role of adulthood
- list out various life skills of adulthood
- recognize the techniques of career choice

UNIT 21 PSYCHOLOGICAL WELL-BEING

OBJECTIVES

After going through this unit, you will be able to:

- Define psychological wellbeing.
- Describe impact of wellbeing on human development.

Well-being is a multifaceted concept. It is often thought of as one of the hallmarks of the liberal arts experience, resulting from educational encounters that both guide students in the search for meaning and direction in life and help them realize their true potential. **Well-being**, **wellbeing**, or **wellness** is a general term for the condition of an individual or group. A high level of well-being means in some sense the individual or group's condition is positive. According to Naci and Ioannidis, Wellness refers to diverse and interconnected dimensions of physical, mental, and social well-being that extend beyond the traditional definition of health. It includes choices and activities aimed at achieving physical vitality, mental alacrity, social satisfaction, a sense of accomplishment, and personal fulfillment.

The Stanford Encyclopedia of Philosophy (SEP) entry for well being identifies the ways in which the terms related to happiness differ. According to the SEP, the terms ‘happy’, ‘wellness’ ‘satisfaction’, ‘pleasure’ or ‘well-being’ are used, they can refer to a series of possible states:

- Reflection on past events
- Moment-to-moment evaluations of happiness

- by oneself, or another person
- inferred from neuroimaging,
- from sensory input (pain, pleasure),
- inferred from cognitive structure (dysfunctional thinking, delusion),
- inferred from virtue (is prayer inherently instrumental to well-being?),
- duration of the experience,
- impact on other factors (e.g. personal agency, power),
- repetitiveness (is pleasure derived from addiction incompatible with happiness?),
- objectivity (is ‘healthy eating’ or ‘sex’ ‘always’ pleasurable?),
- whether that experience is altruistic or egoistic, whether happiness reflects an emotional state (affect-based account),
- or a cognitive judgement (life satisfaction account), indescribable and indescribable

The Ryff is a straightforward and relatively short survey that assesses the psychological component of well-being. This review discusses the administration and cost of the Ryff. The theoretical background, development, and psychometric properties of the instrument; and possible uses of this instrument in higher education assessment settings.

Carol Ryff’s six categories of well-being are:

1) Self-Acceptance

High Self Acceptance: You possess a positive attitude toward yourself. Acknowledge and accept multiple aspects of yourself including both good and bad qualities. Feel positive about your past life.

Low Self Acceptance: You feel dissatisfied with yourself. You are disappointed with what has occurred in your past life; are troubled about certain personal qualities. You wish to be different than what you are.

2) Personal Growth

Strong Personal Growth: You have a feeling of continued development. You see yourself as growing and expanding and are open to new experiences you have the sense of realizing your potential; see

improvement in yourself and your behavior over time; are changing in ways that reflect more self-knowledge and effectiveness.

Weak Personal Growth: You have a sense of personal stagnation and lack the sense of improvement or expansion over time; feel bored and uninterested with life. You feel unable to develop new attitudes or behaviors.

3) Purpose in Life

Strong Purpose in Life: You have goals in life and a sense of directedness and feel there is meaning to your present and past life. You hold beliefs that give life purpose and have aims and objectives for living.

Weak Purpose in Life: You lack a sense of meaning in life; have few goals or aims, lack a sense of direction; do not see purpose of your past life; and have no outlook or beliefs that give life meaning.

4) Positive Relations with Others

Strong Positive Relations: You have warm, satisfying, trusting relationships with others. You are concerned about the welfare of others and are capable of strong empathy, affection, and intimacy. You understand the give and take of human relationships.

Weak Relations: You have few close, trusting relationships with others and find it difficult to be warm, open, and concerned about others. You are isolated and frustrated in interpersonal relationships and are not willing to make compromises to sustain important ties with others.

5) Environmental Mastery

High Environmental Mastery: You have a sense of mastery and competence in managing the environment and control complex array of external activities. You make effective use of surrounding opportunities; and are able to choose or create contexts suitable to your personal needs and values.

Low Environmental Mastery: You have difficulty managing everyday affairs; feel unable to change or improve surrounding contexts; are unaware of surrounding opportunities; and lack a sense of control over the external world.

6) Autonomy

High Autonomy: You are self-determining and independent and are able to resist social pressures to think and act in certain ways. You regulate behavior from within; and evaluate yourself by personal standards.

Low Autonomy: You are concerned about the expectations and evaluations of others and rely on judgments of others to make important decisions so as to conform to social pressures to think and act in certain ways.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

1. What is wellbeing?

……
……

2. What are Carol Ryff's six categories of well-being?

……
……

UNIT 22 FORMATION OF IDENTITY AND SELF-CONCEPT

OBJECTIVES

After going through this unit, you will be able to:

- Define identity.
- Describe types of identity.
- Define self-concept.
- Explain factors of self-concept.

22.1 Identity

Identity refers to our sense of who we are as individuals and as members of social groups. Our identities are not simply our own creation. The identities grow in response to both internal and external factors. To some extent, each of us chooses an identity, but identities are also formed by environmental forces out of our control. Identity is dynamic and complex, and changes over time.

Identity is a complex psychosocial construct that has inspired numerous research approaches and emphases since its first introduction by Erik H. Erikson in 1950. According to Erikson (1968), identity formation is a

central developmental task in adolescence, and it provides a person with a sense of sameness and continuity across time and place. Starting in adolescence, a gradual change takes place from being a recipient of care to being a provider. Such development requires a change in a view of oneself in the world. Thus, identity development has been primarily studied in adolescents, often among student populations. However, the identity formation process neither begins nor ends during the adolescent years. In fact, only about half of young people have been found to obtain an achieved identity by early adulthood.

Self-Identity and Social Identity

- Self-identity refers to how we define ourselves. Self-identity forms the basis of our self-esteem. In adolescence, the way we see ourselves changes in response to peers, family, and school, among other social environments. Our self-identities shape our perceptions of belonging.
- Social identity is constructed by others, and may differ from self-identity. Typically, people categorize individuals according to broad, socially-defined labels. For example, if you have dark skin, you may be abeled “black” by others even though you may not have adopted that identity for yourself.

A positive self-identity is correlated with positive self-esteem. All identities are not equally valued by society. So some adolescents may especially need reinforcement to help them construct a positive sense of self.

Dimensions of Identity

Many dimensions of our identity intersect to form our sense of self and cannot be separated from one another. Visible dimensions of identity, such as race and gender, tend to be more important for individuals since they are significant to the individual in every social context and carry more serious consequences in society. For example, race may be important in all social interactions, but political identity, which is not ordinarily visible, may be relevant for some individuals only during election time.

Stages and Statuses of Identity Development

In the 1960s, psychologist Erik Erikson argued that adolescents face a major identity crisis, “Identity vs. Identity Diffusion,” which he considered one of the stages of psycho-social development. Successful resolution leads to a secure identity; failure leads to role confusion and a weak

sense of self. The key to resolving this crisis lies within the adolescent's interaction with others. James Marcia, also a developmental psychologist, described similar tasks for adolescents, but rather than characterizing them as "stages" he believed the process was non-linear. Marcia proposed that "statuses" of identity development occur in response to crises in domains such as school, relationships, and values, rather than progressing in a linear fashion. According to Marcia:

- Identity Diffusion is the status of adolescents who have not made a commitment to a particular identity. A youth who has not yet considered college or job prospects, for example, could be said to be in the "identity diffusion" status with respect to his professional identity (although in other dimensions his self-identity may be strong). This status may not be resolved unless some experience forces a crisis.
- Identity Foreclosure involves committing to an identity prematurely without exploration or choice. This might occur, for example, when traditions are compulsory or parents are insistent on a particular identity, "foreclosing" conscious choice by the adolescent.
- Identity Moratorium is a stage of active exploration coupled with low commitment to a particular identity .This is an interesting, exciting, and potentially dangerous time for an adolescent that often leads to conflict with parents or other authority figures. Adolescents need to be free to explore their identities, but also need guidance and support to proceed safely through this status.
- Identity Achievement is said to occur when the adolescent, having had the opportunity to closely explore an identity, chooses that identity with a high degree of commitment.

Identity Formation

Identity formation is the development of an individual's distinct personality, which is regarded as a persisting entity in a particular stage of life by which a person is recognized or known. This process defines individuals to others and themselves. Pieces of the individual's actual identity include a sense of continuity, a sense of uniqueness from others, and a sense of affiliation. Identity formation clearly influences personal identity by which the individual thinks of him or herself as a discrete and separate entity. This may be through individuation whereby the undifferentiated individual tends to become unique, or undergoes stages through which differentiated facets of a person's life tend toward becoming a more indivisible whole.

Individuals gain a social identity and group identity by their affiliations. Self-concept is the sum of a being's knowledge and understanding of himself. Self-concept is different from self-consciousness, which is an awareness of one's self. Components of self-concept include physical, psychological, and social attributes, which can be influenced by the individual's attitudes, habits, beliefs, and ideas.

Cultural identity is one's feeling of identity affiliation to a group or culture. Similarly, an ethnic identity is the identification with a certain ethnicity, usually on the basis of a presumed common genealogy or ancestry. Further, national identity is an ethical and philosophical concept whereby all humans are divided into groups called nations. Members of a nation share a common identity and usually a common origin in their sense of ancestry, parentage, or descent. Lastly, religious identity is the set of beliefs and practices generally held by an individual, involving adherence to codified beliefs and rituals and study of ancestral or cultural traditions, writings, history, and mythology, as well as faith and mystic experience.

To understand about how identity is formed, we must first get a grasp of what identity really is. To put it simply, identity is something that defines who an individual is. It is forged through a process of development of uniqueness. However, "Identity is multifaceted concept. It relates to the understandings people hold about who they are and what is meaningful to them" (Giddens 76).

According to Giddens, the concept of identity consists of two major components. That is why sociologists classify the term identity into social identity and self-identity. Social identity is the characteristics that other people attribute to an individual. Conversely, self-identity refers to the process of self-development. To understand it more deeply, the individuals must be able to recognize their own identity. To do so, one must be able to see his self as an object. Seeing him as an object and conducting communication within himself allows him to recognize his identity. Furthermore, the need to conduct communication with our selves leads us to the fact that language is substantial in the process of recognizing our identity. Without language, one cannot communicate with his self as an object. Thus, he is unable to recognize his identity.

Furthermore, the socialization leads to the identity forming of the individual. Mills claims that it is impossible to understand the life of an individual without simultaneously understanding the history of society. It means that the individual and the society are closely related. The individual's action affects the society, and the society also has a great

influence toward individual. The process of recognizing identity is essentially social structure, and it takes place in the social world. The further application of seeing ourselves through the eyes of others guides us to shift from what we started to do because of the response the other makes. For instance, a child who used to spill the soup will stop his past habits as his surroundings (mother, father, etc.) scold him for doing that. It clearly shows us that every decision we made is affected by the society, whether it is direct or indirect. A self is reflective of the social structure in which the individual lives and develops. It is the essential of socialization, which is the process of internalization of the society into the individual. Therefore, we can conclude that identity forming is a part of socialization.

The process of socialization in which the identity forming takes place can be classified into two steps. It is basically classified based on the individual's self-awareness and knowledge of the culture in where he is born. The first step is the primary socialization. Every individual is born in an objective social structure. They have neither self-awareness nor the knowledge of the culture to begin with. Hence, significant others have the responsibility to be the representative of the social world and forms individual's identity. This process begins in an individual's childhood. As a result, the society in which one is born plays an important role in forming his identity. This process ends when the individual has gained the concept of generalized others, the generalization of one's specific roles and attitudes. It develops social identity. The second step is the secondary socialization. Although the society influences one's identity, it does not take away his freedom to choose his independent thought and action. The secondary socialization allows the individual to develop the self-identity where his decision matters more than the society. However, it is inevitable that the decision is affected by his identity. The identity formed by the society in the primary socialization is the basis of every development the individual made.

Factors influencing Identity Formation

Our identity, or the way we perceive and express ourselves, is shaped by nearly everything that we do and have experienced. Here are a few of the key factors that influence our identity:

- **Childhood**: Naturally, the way you're brought up has a huge impact on who you are. The religious, economic and social standing of your parents is bound to shape you in some way. For example, even if you reject the religious beliefs of your parents,

you're still shaped by them. It's *because* you were raised in this way that you then choose to live life in a different way!

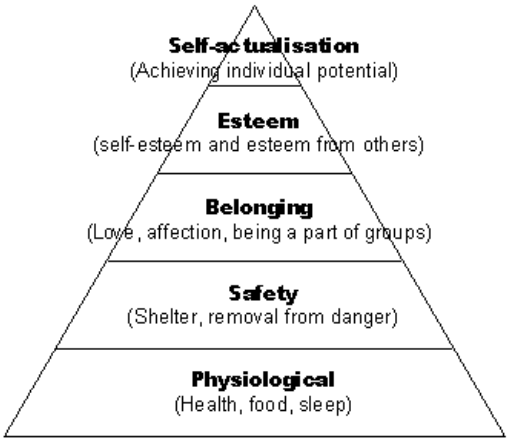
- **Environment**: Again, this is down to what you've been exposed to. In fact, most things that influence your identity are. Spending your life in Texas is likely to give you a totally different perspective on life to growing up in Stockholm.
- **Life Experiences**: If you've been travelling and have experienced different cultures, this is bound to have an impact on how you see yourself and what you value in life. Equally, the jobs you take and the schools you attend will also shape you as a person.
- **Gender and Sexuality:** Gender identity obviously has a huge impact on how you see yourself. Regardless of whether you identify with the sex you were born as, gender norms and stereotypes will make a difference to how you perceive yourself – your sexuality will do the same.
- **Social Group**: The people you hang out with and the friends you make will help shape your social identity. A basic example of this is the way high-school cliques are formed. Teens often group together with those they identify with in terms of music, fashion, activities or personal strengths.

The Need for a Sense of Identity

Beyond the basic need for a sense of control, we are deeply driven by our sense of identity, of who we are. We are in the middle of our individual world, where we place central importance on our sense of individual self. As Descartes said, 'I think, therefore I am.' Many social theories are to do with creating or preserving our sense of identity.

Identity and needs

Psychologist Abraham Maslow defined a hierarchy of needs, with the particular revelation that when lower level needs are not met, then higher-level needs will be abandoned in favour of shoring up the deeper needs.



Maslow's Hierarchy of Needs

That can be clearly seen here is that the upper three levels are about the person and their sense of self. This is in contrast to the bottom two levels, which are about control.

Types of Identity

Individual identity

We may, to a lesser or greater degree, define ourselves internally, with limited reference to others. Those for who this is a major way of creating identity feel little in common with others. When they are with other people it seems as if those others are somehow taking something of their identity away from them.

Group identity

We often categorize ourselves in terms of other people and groups. Evolution has taught us that it is beneficial to live in tribes, where we can share out the work of daily survival. When asked about yourself, you may well describe yourself in terms of your work and family relationships: 'I work for AB Corporation.' Or 'I am married to Steve and have three children.'

Some people put a greater emphasis on group identity. In effect, their sense of identity is created through taking a part of everyone with who they bond and adding it to their own sense of self. In this way, our self becomes a complex, multiple, social being. If we lost our job, it would not just be the loss of money (affecting our sense of control) that hurt us, but also the loss of relationships and feelings of being outside the company with which we have identified ourselves for so long.

The fear of rejection from the groups with which we identify is a powerful force and just the thought of this is enough to dissuade many people from ever taking their creative ability out of the cupboard where they have locked it for fear of its potential social effects.

Types of Group Identity

Traditional theories of group identity recognize two types of group identity:

- **Ascribed Identity** is the set of demographic and role descriptions that others in an interaction assume to hold true for you. Ascribed identity is often a function of one's physical appearance, ethnic connotations of one's name, or other stereotypical associations.
- **Avowed identity** is comprised of the group affiliations that one feels most intensely. For example, if an individual is assimilated into a new culture, then the values and practices of that destination culture will figure importantly in her avowed culture. A related concept is reference group. A reference group is a social entity from which one draws one's avowed identity. It is a group in which one feels competent and at ease.

Ascribed and avowed identity is important for understanding intercultural communication. This is because a person from another culture usually communicates with you based on your ascribed identity; that is how you are being perceived by that other person. But sometimes your avowed identity the groups with which you really feel a sense of comfort and affiliation diverges from that ascribed identity. In such cases, the interaction is bound to be frustrating for both parties.

Recently, many identity theorists have moved toward a Communication theory of Identity (CtI) or related ideas. According to this perspective, your cultural group membership is not a static label or fixed attribute. Rather, cultural identities are enacted or performed through interaction. One enacts identity through choice of language, nonverbal signs such as gesture and clothing, and discourse strategy. Depending on the situation and on your goals, you may enact identity in very different ways on different occasions.

Cultural Identity

Cultural identity performances can vary along three dimensions:

- **Scope of Identity Performance**—How many aspects of one's behaviour express cultural identity? For example, one may choose to eat a few ethnic-related foods, but reject ethnic dress. Or one may allude to national myths or sagas in speaking just with co-nationals, or may tell such stories at diverse occasions among diverse listeners.

- **Intensity of Identity Performance**—How powerfully does one enact one's identity? One may note in passing one's national origin, or one may make a point of proclaiming the centrality of national origin at every opportunity.
- **Salience of Identity Performance**—How obvious is the cultural elements of identity in one's daily routines? Ethnic dress, insistence on using one's first language over the host national language, or reliance solely on ethnic mass media are all ways in which one asserts identity.

National Identity

National identity is one's identity or sense of belonging to one state or to one nation. It is the sense of a nation as a cohesive whole, as represented by distinctive traditions, culture, language and politics. National identity may refer to the subjective feeling one shares with a group of people about a nation, regardless of one's legal citizenship status. National identity is viewed in psychological terms as "an awareness of difference", a "feeling and recognition of 'we' and 'they'".

The expression of one's national identity seen in a positive light is patriotism which is characterized by national pride and positive emotion of love for one's country. The extreme expression of national identity is chauvinism, which refers to the firm belief in the country's superiority and extreme loyalty toward one's country.

Formation of National Identity

National identity is not an inborn trait and it is essentially socially constructed. A person's national identity results directly from the presence of elements from the "common points" in people's daily lives. These include national symbols, language, colours, nation's history, blood ties, culture, music, cuisine, radio, television, and so on. Under various social influences, people incorporate national identity into their personal identities by adopting beliefs, values, assumptions and expectations which align with one's national identity. People with identification of their nation view national beliefs and values as personally meaningful, and translate these beliefs and values into daily practices

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

3. Define – Identity.

……

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4. What are the types of Group Identity?

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22.2 Self-Concept

The core of personality is the self-concept. Cattell (1957) referred to self-concept as the 'Keystone of personality'. Rogers (1951) who developed a theory of personality based on the concept of self, explaining the concept says "man is an organized whole rather than an accumulation of atomistic units". He deals with the total individual. Self-concept has been considered as a person's view of himself, the fullest description of himself, of which a person is capable at any given time.

According to Allport (1961) self-concept is something of which we are immediately aware. We think of it as the warm, central private region of our life. As such, it plays a crucial part in our consciousness, in our personality and in our organism. It is some kind of core in our organism.

Self Concept implies a person's perception (or) view of himself. Self-concept is what the individual thinks as his actual self. Self-concept plays an important role in the development of personality of an individual. The positive self-concept is likely to enable an individual to lead a happy, contented and well-managed life. The idea of self starts growing from the period of infancy and grows during childhood, adolescence and maturity.

Definitions of Self-Concept

In the middle of the present century 'self became a primary psychological unit. A sound theory on self was built and as a result self-concept came to be considered the central aspect of personality (Halland Lindzey, 1985).

The self–concept is considered by many researchers as the central theme of life which affects all relationships, performances and achievements either positively or negatively. The basic assumption is that individuals who feel good about themselves and their abilities are

the ones who are most likely to succeed. Academic success or failure appears to be as deeply rooted in concept of self as it is in measured mental ability (Parkey, 1970). Researchers in psychology and education have undertaken numerous studies both descriptive and developmental in the last forty years on self and its relationship with other constructs.

- Yamamoto (1972) quoted that man perceives and defines himself, as he believes others perceive and define him, thus “the reflected or looking-glass self.”
- Michener (1986) states that the self is the individual viewed as both the source and the object of reflective behaviour. The self is both active (the source that initiates reflective behaviour) and passive (the object toward which reflective behaviour is directed).
- According to Rebok (1987), self-concept is “the sum total of the ideas and perceptions a person has about himself”.
- Bhatia (1977) has defined self-concept as the individual’s perception of his abilities and his status and roles in the outer world.
- Helms and Turner says (1981) that self-concept is the manner in which individuals perceive themselves.
- Self-concept refers to the “the composite of ideas, feelings, and attitudes people have about themselves”. (Hilgard and Alkinson, 1979, P.605)

Characteristics of Self-Concept

An individual at any moment has access to much more than can be physically observed. There are four characteristics of self-concept.

- First self-concept is always changing. A child has great difficulty in getting a clear grasp of who he is. This makes change in behaviour possible.
- Second, the self-concept has a basic stability. Despite the momentary manifestations of changes, a deeper understanding of self is carried across events. It is this stability which carries the confident man through defeat after defeat and causes the sudden victory to be accepted.
- Third, the self-concept is influenced by the intensity with which one experiences aspects of his environment. That is one’s needs vary from moment to moment. It is dependent upon the particular need which he currently experiences.

- Fourth, the self-concept has direction. At any moment the overt behaviour may be seen at random but the self-concept is organized, has purposes and seeks to satisfy its need in a meaningful fashion.

In short, the self-concept can be considered as a unified whole having basic characteristics. The self-concept is formulated early in life and has stability; while capable of change, it is largely intact.

Components of the Self-Concept

i. Self-Awareness

Social awareness, the awareness of other persons and the awareness of one's self, both develop during infancy and childhood. The self-awareness becomes differentiated when the infant's needs are not met. The contrasting nature of frustration and gratification leads to the beginning of self-awareness during infancy. The mother's failure to meet his needs and the delays in ministering to his wants lead to a growing recognition of "I" and "not I".

Another means of self-awareness in infancy is oppositional behaviour. He refuses to be washed or bathed. Such behaviours are an indication of his awareness of being an individual. Memory as well as language helps in promoting the sense of continuity and formation of the self-concept. Through continuous memory of his past he develops a sense of personal identity.

ii. Self-Acceptance

Self-understanding and self-acceptance are closely associated and contribute to mental health and good interpersonal relations. Self-acceptance requires a perception of one's assets and limitations. It is a constructive use of his abilities, whether they are high or low. Alfred Adler has showed that there is deficiency in development when one reflects one's self and develops inferiority feelings. He may be a very talented or intelligent person, but he may suffer from feelings of self-rejection.

Self-acceptance also promotes tolerance towards other persons and the acceptance of the events which happen in one's life. He sees human beings as they are and the world as it is. Self acceptance promotes self-evaluation. Such a person can be critical about himself and has a sense of responsibility for his actions.

iii. Self-Esteem

Self-esteem is a personal judgment of one's worth which is expressed in the attitudes, the individual holds toward himself. Cooper Smith (1967) found that the children perform better in their estimation of themselves in approached tasks and persons with the expectation that they would be successful in the tasks and would be respected by the persons. They have confidence in their perceptions and judgments. They believe that they can fulfill the tasks which they have undertaken. Their favourable self-attitudes enable them to accept their own judgments with confidence when there is a difference of opinion about some problem.

iv. Self-Control

Discipline in society arises from obedience and self control. Discipline which arises from obedience is external. It belongs to a lower level. Hoffman (1963), on the basis of several studies, concludes that children who are capable of self-control are likely to have mothers who often use inductive discipline, that is mothers who explain and draw the attention of the child to the consequences of his actions to himself and to others. He then develops the ability to form moral judgments about his own actions. This depends on developing a sense of self.

v. Self-Direction

Self-Direction implies that the child desires to do something worthwhile and productive. Such children are not looking for material rewards not for praise from the parents or teachers but the satisfaction of attaining.

vi. Self-Actualization

Self-actualization is looked upon as an important motive in man's life by Allport (1961), Rogers (1951), and Maslow (1954) Realising one's potential as a unique human being is considered a positive, constructive and realistic process. Self-actualization is a process and not a state.

Major Qualities of Self-Concept

Self concept has three major qualities. They are: 1. Learned, 2. Organized and 3. Dynamic.

1. **Learned nature of self-concept:** Self-concept is developed through the interaction with the environment. It gradually emerges in the early months of life and is shaped and reshaped through repeated perceived experience. The knowledge, assumptions and feelings one has about him is central to most of the mental processes. Self-concept as a social product developed through experiences, possesses relatively boundless potential for

development and actualization. Individuals perceive different aspects of themselves at different times with varying degree of clarity. Any experience which is inconsistent with one's self-concept may be perceived as a threat.

2. **Organized nature of self-concept:** Each person maintains countless perceptions regarding one's personal existence. Self-concept has generally stable quality that is characterized by order lines and harmony. It is this generally stable and organized quality of self-concept that gives consistence to the personality.

3. **Dynamic nature of Self-concept:** Franken (1994) states, "there is growing body of research which indicates that it is possible to change self-concept. Through self reflection, people often come to view themselves in a new, more powerful way. Self-concept development is a continuous process. In the healthy personality there is a constant assimilation of new ideas and expulsion of old ideas throughout life. Individuals, strive to behave in ways that are in keeping with their self concepts, no matter how helpful or hurtful to self or others.

Factors influencing Self-Concept

Hurlock (1985) has pointed out the following factors influencing self-concept.

- ***Physique***: Carter and Chess (`951) found out that the image of a person has of himself is largely a reflection of how others react to him or at least, of how he thinks they react. McCandles (1970) has also supported the view that the reactions from others that one receives concerning physical appearance in general, influence self-concept.
- ***Socio-Economic Status:*** Kuppuswami (1974) has observed that there was a significant relation between socio-economic status and self-concept. It looks as if economic security has a positive effect and leads to a better self-concept.
- ***Race and Nationality:*** Study done by White and Richmond (1970) found no consistent differences in self-concept of economically deprived black and economically advantaged white children, indication that socio-economic status may be a more important factor than race.
- ***Parental Factors:*** Ansubel et al. (1954) reported that children's self-concept develop according to the pattern of parents reward

and punishment but that when this patter stresses objective rather than need of the developing child, unfortunate characteristics may develop.

- ***Age and Maturity:*** According to Jerslid, Teiford and Sawney (1975), a child's self-concept has been reported to change with age. O Conner (1976) based on a four year longitudinal study, mentions that self-concept become more organized and mature with age.
- ***Intelligence***: The mental ability to meet the demands of the environment enhances the self-concept, (Strag 1957).
- ***Gender***: Bledsoe (1964) found that girls had a higher self-concept than boys of the same age group.
- ***Name and Nick Names:*** Hurlock (1972) in his study found out that if the name of a child elicits pleasant associations in the minds of others, they will treat him well, and this will have a good effect on his self-concept. On the other hand, it elicits an unfavourable first impression, the treatment child received from others will be less pleasant and as a result, he will develop an unfavourable self-concept.
- ***Level of Aspirations:*** Failures damage the self-concept. A study done by Hurlock (1972) shows that success leads to favourable self-concept.
- ***Inter-Personal and Social Adjustments:*** Other people often reject those with poor self-concepts. Acceptance of others, acceptance by others and acceptance by best friends are related to self-concept scores with highest acceptance on a group with moderate self-concept scores and lowest in a group with low self-concept scores Rice (1984). Acceptance of self is positively and significantly correlated acceptance of and by others. Thus, there is a close relationship between self-acceptance and social adjustment (Badiman and Johnsons 1979). Children having low self-esteem are likely to have high anxiety, do poorly in school, be unpopular and take a passive role in group discussion (Bussen et al. 1974).
- ***Mental Health:*** Self-esteem has been called the survival of the soul. The ingredient gives dignity to human existence. It grows out of human interaction, which the self considers as an important source to one. The ego grows through small accomplishments, praise and success (Rice 1984). A definite correlation has been

established between mental health and identified achievement (Coshman and Manosevit 1974).

- ***Parental Interest, Concern and Discipline:*** The more parental care and interest there is, the more likely the adolescent is to have self-esteem (Hamacheck, 1976).
- ***Mood***: A mood is a temporary emotional reaction. Mood and temperament may reflect similar emotions, but temperament, colours person's characteristic method of adjusting to life while mood colours only the present pattern of adjustment.

  Fontana (1988) defines mood as a state of feeling of a varying duration. There may be an innate factor in the temperament (that body chemistry may play a part) but mood seems to be under environment influence. At each point, the child's mood is in a part a response to the behaviour of people around him, can only be understood if it is viewed within the context of this behaviour. Meyer (1988) says that negative mood can often be all deviated by positive behaviour. A positive mood is sustained by positive behaviour. A positive mood is conductive to positive thoughts, which helps predispose one to positive behaviour.

The Image of Self

There are mainly three aspects of the self. They are the physical self, the social self and the self-concept. The self begins as the physical self, the boundaries of which must be discovered by the infant. The self defined in terms of its physical limits, its organic sensations, and its limited contacts with its immediate environment, is of relatively short duration. A person's physical self may be a significant determiner of other people's evaluations of him which may greatly influence his social self. As soon as the child becomes socially sensitive, he begins to develop a self-concept. The child very early in life accepts as valid other people's judgments of him and his characteristics. As the result of other people's treatment of him, he comes to have a general idea of the kind of person he is and begins to act in accordance with his self-concept.

Development of Self-Concept

A substantial part of the self-concept is a reflection of how others view the person. One's self-concept is thus a self image that "the impression it makes on others and the impression it makes on ourselves as perceived". While the child is learning to differentiate among the various components of his physical and social environment, he is also learning who he is and what he is. At the same time he is learning the limits of his

physical self, the difference between people and things, and the significance of certain individuals in his life. He is also becoming aware of the kind of person he is. He is developing a self-concept. This self-concept is largely a social product.

The child raised in a normal social environment objectively compares his own competences with those of others. As a result of a series of self comparisons he develops a notion of the kind of a person he is. He is born into a given culture with criteria and standards of worth already defined and established. From the moment of birth, the child is subject to a set of built-in reinforcement (rewards and punishments) for being or failing to be a certain type of person and for doing or not doing certain things. He comes to evaluate himself and his worthiness as an individual in terms of reinforcements, which consist largely of the reflected appraisals of other people.

Originally the child appraises himself and develops his self-concept in terms of what the parents and others close to him manifest by means of physical punishments and rewards, facial expressions, gestures and words. The child also gains a larger frame of reference for self-evaluation when he observes how others are treated in comparison with himself. The child and to a large degree, the adult has no other measures of his own value than the recognition he receives or has received from others. As Jersild (1960) puts it, “it is a composite of a person’s thoughts and feelings, strivings and hopes, fears and fantasies, and his attitudes pertaining to his worth”. Self-awareness is a growth process which begins in infancy and early childhood and continues through later childhood, adolescence and adulthood.

Importance of Self-Concept

The influence of the ‘self’ on behaviour operates both consciously and unconsciously and is much more noticeable where motivated and need satisfying interactions are involved, and also in situations where there is a choice. According to Shoben “in any case ‘self’ involved behaviour seems close to impossible to explain on the basis of a tension reduction model and population of self involvement seems necessary to account for the pursuit of long term goals, so typical of human motivation”.

The role of self is prominent in goal directed activities, its role and influence is extended to many spheres of activity like perceiving, thinking, learning and other cognitive processes and of course in many complex activities like decision-making. The goal setting task performance is known to be influenced by the self. Adjustive and coping behaviour of varied kinds are also influenced by the self. Choice of

behaviour consistency integrating continuity and a number of attributes of human action seem to be very much influenced by the self. In the words of Sherif “in brief the growing interest in a self-concept that reflects the search for integrating concepts, particularly motivation, where empirical work has tend to be fragmentary”.

A person must have a self-concept which is realistic and which is not too different from his ideal of what he should be. This helps him to accept himself. The self-accepting person is familiar with his weaknesses. He accepts those weaknesses and tries to overcome them. The person who accepts himself is guided by his own standard. He has insight into and understanding of his ability. The self-accepting person believes that he can deal with life and is confident that he is as worthy as others; and assumes responsibility for his own behaviour. So it is true that, to lead a successful life, it is essential that a person must possess an adequate self-concept.

Theoretical Views on Self-Concept

Self-concept can be understood as the relatively stable picture people have of themselves and their own attributes. Two features of self-concept are of particular theoretical and practical relevance of the ‘content’ of self-concept and the evaluation of attributes. Various theorists have emphasized different aspects of the structure, function and determinants of self-concept.

i. Looking-Glass Self-Concept Theory:

A particularly influential approach to the origin of self-concept was ‘symbolic interactionism’. Coolly (1902) introduced the concept of the ‘looking glass self’ to represent the idea that “a person’s self-concept is in large part the result of interactions with others significantly”. He, who saw feedback from others as being crucially important, developed this idea further. According to him, the self-concept is like a looking glass, reflecting what we believe that other people think of us. This self-concept includes both evaluative and illustrative dimensions. The evaluative dimensions are the judgment that we believe they see when they look at us.

ii. Functional Theory of Self-Concept:

A comprehensive theory dealing with the function of self-concept was suggested by Epstein (1973). He indicated a variety of positions on the nature of self-concept. According to him, “Self-concept serves two basic functions:”

- Hedonic. It maximizes pleasure and minimizes pain, which is equivalent to the self-esteem.
- Structuring or integrating. It organizes and assimilates the data of experience, which focuses on the total to maintain the conceptual system and consistency.

iii. Phenomenological Theories:

According to the phenomenological theories, the adolescents' personality is directed by the 'self,' which interprets experiences based on its own private, idiosyncratic concepts and self-image. Hence adolescents' personalities depend on the way they perceive the self and the way, where the self perceives other people and experiences.

The adolescent self-concept is an essential construct in most phenomenological theories of personality. In attempts to analyse this phenomenon, researchers have examined the adolescent self-concept in relation to such variables as family relationships, school grades, peer group, gender and age. A necessary precondition for the development of the self-concept is the ability to differentiate itself from the surrounding environment that is to develop a sense of the self as subject, which is the existential self, "I". Another condition is to learn the particular attributes that define the self as object, which is the categorical self "Me".

The investigation in the development of the content of the self-concept beyond infancy has largely been based on verbal rather than behavioural criteria. In particular, this is seem on clinical interviews or content analysis of standardized response data. In the opinion of Brooks Gunn, (1979) at birth there is no self-concept. For children, a secure emotional attachment to their caregivers is the crucial prerequisite for the development of a favourable self-concept. According to Lewis and Brooks Gunn, (1979) a key to the development of a favourable self-concept is the experience of regular consistencies between actions and outcomes in the external environments, which allow the infants to establish generalized expectations about control of the world. Particularly important behaviours are caregiver's attempts to meet the infant's homeostatic needs and parental imitation of infant's actions.

According to Coppersmith, (1967) the parenting style used by parents of boys with high self-esteem was characterized by high acceptance of their children, clearly defined limits on their children's activities, and within the limits set by parents' standards and social norms, respects for individuality.

Self-concept refers to the picture or image a person has of himself. Goffman (1959) views the self-concept as reflecting the collection of social roles played by the individual. In short, self-concept deals with the sum total of an individual's beliefs about his or her own personal attributes. In other words, it is the ability to differentiate itself from the surrounding environment. In this investigation, self concept is classified into the four aspects. They are basic self, ideal self, situational self and social self.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

5. What is Allport's definition of Self-Concept?

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UNIT 23 EMERGING ROLE AND RESPONSIBILITIES OF ADULTHOOD

OBJECTIVES

After going through this unit, you will be able to:

- Comprehend responsibility of self.
- Discuss roles and responsibility of adulthood.

The theme of responsibility predominated responsibility for determining one's own life and future, financial and social responsibility, and responsibility for others are emerging roles.

23.1 Responsibility for self

A strong sense of increased personal responsibility was generally seen as a positive aspect of becoming an adult. The following comment summed up the prevailing view:

'Adulthood means being responsible for where you are going, what you are going to do with the rest of your life, and being responsible enough to make the right decisions or the wrong ones, whichever it be.'

Several 23-year-olds specifically mentioned the shift from parental to personal responsibility, for example:

'Adulthood is being in control of what you're doing because you haven't got a mum and dad controlling it anymore.'

'Before, other people's decisions were the ones that affected you. Now, it's a challenge to be in charge of your life and direction.'

Some were a bit anxious about this type of responsibility. Dean, a student and living in a de facto relationship, said:

'It means taking full responsibility for your actions basically and the whole point about adulthood is trying to come to terms with this particular fact. That's where the panic comes from!'

23.2 Financial responsibility

The positive side of financial responsibility has been the sense of control over one's life. But the pressures were frequently mentioned: 'having to watch money', 'bills pressure and work'; 'more responsibilities, looking after the financial and banking side of it, knowing you've got to save instead of spend'; 'having to watch money'.

Even when parents were clearly there as a backstop, there was an acknowledgement of personal financial responsibility in adulthood. Lawrence, who lived with his parents, realized that he had his family as a support but felt that as an adult it was up to him to become financially secure and to make a go of his career.

23.3 Responsibility for others

Looking out for others, feeling obliged to consider others, and accountability for others were also part of adulthood. In several cases, comments were related to a partner or children, but some expressed a more general responsibility for other people.

Deborah had children and for her, adulthood meant 'responsibility for other people, and with that a certain lack of freedom'.

Kate said:

'You've got to start looking at your future. I've already got the responsibility of having a partner, so you've got to change your direction and your pattern.'

Simon was soon to be married, but his comment reflected an attitude developed from growing up in a large, single- parent family and being involved in the scouting movement:

'You can't just be responsible for yourself; you have to look after other people at the same time, but not be there as a babysitter. If someone's doing something wrong or having a bit of trouble, you just give them a word.'

23.4 Social responsibility

Some young adults thought adulthood brought wider social responsibilities. Celia said adulthood meant 'trying to do the right things by yourself and others around you; trying to do the right thing by the community, by the environment, being a "greenie" really. Having the ability to do that for future generations, not just thinking of yourself' is social responsibility.

Shane thought it meant 'taking responsibility for the things around you, trying to change the things that you don't like, just putting your opinion in on what's wrong and what's right with the world'. He said:

'I feel that it's a time of your life (when) if you feel strongly about something, then it's time for you to act and have your say. Adolescence is a time when you formulate all your ideas, formulate yourself and know what you're about. And then adulthood is a time that you take responsibility to do something about the things you feel strongly about.'

Doing something about social issues and problems begins with an awareness of the world beyond one's immediate sphere. For Kerry, being adult meant facing the negative aspects of human behaviour:

'Being adult means not being so naive about the world and people in general.'

Role of Adulthood

Independence and Freedom

Almost as frequently mentioned as responsibility was the sense of independence, personal autonomy and freedom to make one's own decisions. Comments included: 'not being restrained by rules and regulations from school and parents'; 'being able to do what you want when you want without having to ask'; 'not having to ask Mum and Dad'; and 'it means making my own choices, my own decisions'. While this was generally regarded as a very positive aspect of growing up, many young adults talked about ambivalent feelings and the realization that there was also a negative side to freedom and independence. Tamara thought being an adult was 'very unstable':

'When you're a child and you're still going to school, it's safe. You've always got the backing and support of your parents, so whatever happens it always goes back on your parents. If you stuff up, it's your parents' fault. But when you're in adulthood, you're in reality. If you stuff up, it's your fault, and you have to live with it.'

Several young adults reflected on the differences between adolescence and young adulthood and a tendency for views to change. Lucy said:

'I can remember being 15 or 16, and thinking: "I can't wait to be 18 or 19 and move out of home and have my own lifestyle." But I don't think that I was aware of how many responsibilities you have. But I do like the freedom of it too, like I'm in charge of my own self.'

Dean recalled his schooldays:

'It's funny when you're young, you think that you look forward to adulthood. You don't really appreciate the pressures. Now, quite often, I think back on it. You come back from school, put down your bag, watch TV or read a book or just relax.

'Now, I mean, God knows where the next rent is going to come from and we have all these other sort of worries. The sort of worries you might have in childhood take a totally different order of magnitude when you move into adulthood.'

Growing, Learning, Consolidating

Psychological development was not mentioned as frequently as responsibility and independence. Adulthood was variously talked about as a time of increased maturity, growth, learning and personal consolidation. Some comments were:

'Being wise and knowing your limitations.'

'Finding your place in this world, finding where you belong.'

'Having a sense of happiness, having an awareness of who you are, in every situation, but also being able to just let go of that awareness and just enjoy things. Which, I mean, you can't do all the time, but you persevere at it. Also, not relying on other people to do your dirty work.'

Lisa thought constant challenges were part of becoming an adult:

'You learn something new each day and I think yeah, maybe I can do something like that next time. You're forever being tested in your life, so as you mature more, you're being tested more. Tests at school are nowhere near what I've gone through to get to 23 years of age. Imagine what I'm going to go through to get to 30. All my little experiences are in

the back of my mind and it's sort of clicking over. I suppose you grow wiser.'

Social Markers of Adulthood

For some young adults, adulthood included the recognized social transitions of employment, leaving home, becoming committed to a relationship and establishing a family of one's own. Such social markers were mentioned both by young adults who had made these transitions and those who had not. Janice was married and said:

'I'm still part of a family, but we've become our own family. Now we do our own thing. That's adulthood for me. And later on to have children.'

George wasn't partnered but for him, adulthood meant 'marriage, being a parent, kids, things like that'. Because Erica was not in a relationship, she felt that she was not an adult in all ways:

'I consider myself an adult in some ways but not in others as I don't have a relationship, and I'm free to really do what I want.'

When asked whether having a relationship made her more of an adult, she replied:

'It does, it's sort of more of a permanent thing, that you know you might settle down one day; you might take on a lot more responsibilities.'

Cameron summed up the importance of the major transitions this way:

'Adulthood is what I'm doing now working, living, earning a living, living with someone, supporting each other.'

Bill and Joanne saw establishing a home and having children as part of being an adult but something that they weren't ready for yet:

'It means responsibilities which I haven't got any of at the moment. A house and you get kids and all that sort of thing. You sort of tie yourself down and I don't like being tied down.' (Bill)

'More commitments; you've got to work harder as you get older because you're eventually going to have to buy a house, and all that sort of stuff. I just take it as it comes really, I don't really think about it.' (Joanne)

The right to vote was mentioned by only one respondent and although getting a car and a driver's licence were often mentioned as important events since the age of 16 and significant in the development of independence, they were not mentioned in the context of adulthood.

Living at Home and Being Adult

There were no consistent differences between those who lived with parents and those who did not when respondents defined adulthood. However, some thought that living with parents did mean restricted independence and somewhat less responsibility. Sandy said:

'Even though I'm 23, I suppose a lot of people my age are out of home and I still live at my parents' home. I probably don't feel I have as much independence as them.'

James remarked that adulthood was being more mature, 'but I'm still living with parents and so there's not exactly that many more responsibilities I suppose'. Barbara said:

'I suppose living at home I don't have that total independence that to be an adult would bring. I could say sometimes my parents treat me as an adult when they talk about some things ... But I feel if I was truly adult, I wouldn't be at home.'

Loss of Spontaneity and Good Times

A small minority viewed adulthood in a negative light because it meant growing older. Adults were also regarded as people who no longer had the capacity to be spontaneous and carefree. Comments included:

'If I admitted to being an adult then I would have to also say that I'd reached a point of development where I'm going to be static for the rest of my life, and I'm not willing to do that yet.'

Louis, a confident young man who is successfully running his own small business, said:

'Generally I'm trying to stay young as long as I can. The day I grow old and have to be responsible is the day I think I'll give it away. I'll try to hang on to my youth as long as possible ... Adulthood is scary in a sense. Everyone's scared of responsibility and if they say they're not, they're blind to themselves.'

Christine said:

'I would hate to ever consider myself a real adult, or what is supposed to be an adult. If all the fun and some of my childish side went out of me, I think I'd be a very boring person. It means facing up to responsibilities. You're talking to someone now who hasn't had to face up to any of these big decisions.'

However, such a view did not mean that responsibilities were avoided. The same young woman said 'adulthood means taking control over your

own destiny which I believe I've done for quite a while, up to a certain degree, of course'.

And there was Julie, who remarked that being adult means being 'straight-laced and serious and that's not me'; she owned a small business and was married with two children in her care.

Uncertainty about Adulthood

A small number of young adults (less than 10 per cent of the group) said they were unsure what it meant to be an adult, or they didn't really feel like an adult yet, or they were reluctant to take on some aspects of adulthood. This group included some who carried many of the responsibilities normally associated with being adult and others who did not.

Meredith left school and home at 16 and was thrust into early independence because she did not get on well with either of her (separated) parents. When interviewed, she was married, employed full-time and regarded herself as a confident, competent person. However, she said, regarding adulthood:

'I don't know (what it means). I'm not there yet, I wouldn't have a clue. I don't think there's any such thing as a 'grown-up' or an adult. I think people just get older. I don't think you really change that much; you don't just wake up one day and think: "It's happened, I'm an adult." (But) I don't know anybody in any age group who I would say would be more of an adult than I am.'

A small number of young adults appeared to be uncertain about their adulthood or their acceptance of responsibility by reason of physical illness or emotional problems. Leon had sought help for his emotional problems over a period of years and was having difficulty coping with some aspects of his life. He said:

'Logically, yes, I am an adult but I don't really think of myself as one. I don't have the traits of the person that I saw as an adult when I was 16, the traits that an adult should have. I'm not ready to accept the responsibilities of being an adult yet.'

Alison, who had had several bouts of severe depression since her teenage years, said:

'I don't feel like I'm an adult yet, not truly. Other people obviously see me as an adult but I don't feel that I am. There must be something I've missed. I feel like I'm about 19.'

Preparation for Adult Roles

Young people in developing countries are spending more of their adolescence in school than ever before. Recent growth rates in all indicators of school participation and grade attainment have been substantial, historically unprecedented, and greater for girls than for boys. For example, on the basis of survey data representing 60 percent of the population of the developing world, mean grades attained have risen over the past 20 years from 6.0 to 7.4 (23 percent) for young men ages 20-24 on average and from 3.8 to 6.0 (58 percent) for young women ages 20-24. Furthermore, the percentage who have never attended school has fallen from 21 to 11 percent for boys ages 10-14 and from 39 to 18 percent for girls of the same age over the same period. These positive overall trends in schooling, while typical, are not universal.

Despite these trends, there remain large differences in school attendance rates according to wealth and residential status, with poor girls suffering from particular disadvantage. Recent well-designed evaluation studies have shown that conditional grants or targeted subsidies can be effective strategies for increasing school attendance and progression rates among economically disadvantaged groups.

Global trends in population, health, urbanization, and education have all contributed positively to the growth in the demand for schooling. In most parts of the developing world today, young people live within reasonable proximity of a primary school. This is a notable achievement given the rapid growth in the school-age population. The results of recent internationally comparable standardized tests, however, raise serious concerns about how much students are actually learning in school and therefore about school quality. Poor school quality and poverty remain major factors limiting enrolments, encouraging dropout, and compromising learning outcomes.

The health of young people in developing countries is improving. Young people are entering the transition to adulthood healthier and with improved chances of surviving to old age. And continued reductions in mortality seem likely, with the major exception of countries strongly affected by the HIV/AIDS epidemic.

HIV/AIDS is now the leading cause of death among young people in sub-Saharan Africa. In other regions, it is among the least significant causes of death. Instead, non-communicable diseases predominate as well as injures men. Nevertheless, given the much higher mortality rates in sub-Saharan Africa than in the rest of the world, HIV/AIDS is now the

leading cause of death for women ages 15-29 for the world as a whole and one of the leading causes of death for men in the same age group. Moreover, given the much larger population of young people in Asia, an increase in the epidemic there, which is projected by many, would mean that the numbers of young people affected would increase substantially.

Mortality and morbidity related to pregnancy and childbirth (particularly in sub-Saharan Africa and South Asia, where levels of early childbearing remain high) and as a direct consequence of unsafe abortion across all developing regions remain among the most significant risks to young women's health. Although young women appear less likely than older women to seek abortion, they are more likely to have the abortion later in the pregnancy and to choose an unsafe provider, thus putting them at greater risk.

Behaviours that young people adopt at this age have critical implications for their future health and mortality. In particular, unprotected sex is one of the riskiest behaviours that young people can undertake, particularly in settings in which HIV/AIDS is widespread. Evidence from Latin America and sub-Saharan Africa suggest that contraceptive use rates are increasing among sexually active young women, especially unmarried ones. Condom use, however, remains relatively low but is increasing rapidly in Latin America and the Caribbean as well as Eastern and Southern Africa. Poverty and economic vulnerability enhance the likelihood that young people will engage in risky sexual behaviours. Furthermore, there is growing evidence that coercive sex is not an uncommon experience for many girls and young women.

However, sex is not being initiated at an earlier age relative to the past in most countries. While there has been an increase in the percentage having premarital sex before age 18 in many countries over the past 20 years, delays in the age of marriage in most countries have meant that, on balance relative to 20 years ago, fewer young women report themselves to have been sexually active before age 18. Thus while sex is being delayed, the context of first sexual experience is changing, with a greater likelihood now than in the past that first sex will be experienced prior to marriage.

Other adolescent behaviours with compromising long-term implications for health include smoking, drinking, and using illicit drugs. Across the developing world, tobacco use is increasing, and the gender gap in smoking prevalence is closing rapidly. There is also evidence that the prevalence of illicit drug use among young people is rising slowly.

Alcohol intake is highest among affluent and urban young people and thus is also expected to increase with continued urbanization.

The Transition to Adult Roles

The rise in school enrolment and the delay in the timing of school exits have resulted in a delay in the timing of labour force entry. A concomitant decline in the percentage of young people participating in the labour force, particularly at younger ages has been delayed. Household poverty is strongly associated with the likelihood that children will participate in the labour force; thus a global decline in poverty is an important explanation for declines in the prevalence of labour market work among children. Rising poverty rates in sub-Saharan Africa imply a less positive outlook for trends in children's labour force participation, however.

The rise in school enrolment and attainment and the rapidly closing gender gap in schooling is leading to a growing equalization of work burdens between young men and women during their adolescent years. This is because students spend relatively little time in the labour market, and gender differences in mean daily hours spent by students in noneconomic household work (e.g., household chores) are relatively small. This equalization in work roles is further reinforced by the rise in the proportion of young women entering the labour force, in particular the paid labour force.

The economic returns to schooling at the secondary and tertiary levels are consistently high (and differentially high for young women). The gap between the returns to higher and lower levels of schooling is widening, thus putting an increasing premium on secondary and tertiary schooling for later success in the labour market. The extent to which this shift in rates of return is due to globalization or other factors, such as declines in primary school quality resulting from rapid growth in the student population is not known. Nevertheless, young people with secondary or tertiary schooling are increasingly advantaged in the labour market relative to their less educated peers not only in terms of earnings but also in terms of job stability and upward mobility.

In many parts of Asia, as well as in Latin America and the Caribbean, increased numbers of young people, including a rising percentage of young women, have been absorbed into the formal or informal labour market without any large increase in unemployment rates among young people. Indeed, some countries, particularly in Asia, have succeeded in maintaining strong economic growth at the same time that the labour force has been increasing rapidly, thus reaping an economic dividend as

a result of these demographic shifts. However, youth unemployment is still a substantial challenge in some of the poorer countries of Asia, sub-Saharan Africa, and the Middle East, which continue to experience unprecedented growth in the size of their 10-24-year-old populations even though in many cases rates of population growth have now peaked.

The Transition to Citizenship

Globalization, trends toward greater democratization, rising school enrolment, and greater access to media have all increased opportunities for young people to engage in civic and political life. Recent survey data show that a majority of young men in many Latin American and Asian countries express an interest in politics and a willingness to engage in political activism, whereas young women appear somewhat less inclined to express these views. At the same time that young people are expressing greater voice at the local, national, and international levels, they are becoming increasingly aware of the growth of global diversity and inequality.

Various forms of participation in the life of the community, beyond political participation, are embraced in concepts of citizenship. A variety of institutions and programs, among them schools, employers, national service programs (including military service), sports, other non-formal programs, and the media are increasingly viewed as potentially important in citizenship formation. However, comparative data are lacking on the extent and nature of community participation among young people or on the roles that various institutions play in encouraging or discouraging participation.

The Transition to Marriage

While the transition into marriage is a key component of the transition to adulthood in most contexts is marriage. This itself, is not necessarily a marker of adulthood, particularly for the numerous young women who wed during the teenage years. Substantial delays in the timing of marriage among most young people, however, are contributing to an overall lengthening of the interval between childhood and the assumption of adult roles.

Compared with previous generations, a smaller proportion of young women and men are married in most regions. Men still marry at older ages than women. While only one-third of men in the developing world are married by ages 20-24, nearly two-thirds of women are married in

this age group. Moreover, in certain regions, most notably the Middle East, a large fraction of men now postpone marriage until their 30s.

The minimum legal age of marriage for both men and women has risen in many countries in the past decade, and women are less likely to be married during the teenage years than in the past. However, child marriage, defined as marriage prior to age 18, is still widespread and viewed by many as a major violation of human rights. On the basis of survey data representing 60 percent of the population of the developing world, 38 percent of young women ages 20-24 married before age 18 (down from 52 percent 20 years ago), with the highest rates of child marriage currently occurring in Western and Middle Africa and South Asia. Young women who marry as minors are more likely to come from poor households and rural areas and to have relatively few, if any, years of schooling.

The age gap between spouses often thought of as a measure of the degree of equality in marriage appears to be narrowing, especially in sub-Saharan Africa and South Asia. There is also some evidence of growing agency on the part of young women with regard to choice of marriage partner, suggesting that the nature of marriage itself is changing.

The Transition to Parenthood

As in the past, entry into marriage is strongly associated with entry into parenthood. Over 90 percent of first births occur within marriage, and this percentage has changed only minimally over the past 20 years. With rising ages of marriage, the age of parenthood has been rising, but the gap between age at marriage and age at first birth has narrowed, falling from 22 to 16 months on average over the past 20 years. These postponements of marriage and parenthood allow young people more time to prepare for adult roles and provide an increasing number of young women with the opportunity to participate in the labour force prior to becoming a parent.

Rates of early childbearing remain high in many parts of the developing world because of high rates of early marriage, as noted above. Based on survey data representing 60 percent of the population of the developing world, 23 percent of young people ages 20-24 gave birth before age 18 (down from 30 percent 20 years ago).

As a result of declines in early marriage, there has been a slight rise in the percentage of births to young women that are premarital. The level of premarital childbearing varies substantially across regions: from 14

percent having a premarital birth by the age of 20 in Eastern and Southern Africa to less than 1 percent in Asia and the Middle East. While Eastern and Southern Africa and Latin America and the Caribbean have seen recent small increases in the rates of premarital childbearing, the rates in other regions appear very low, but measurement is more difficult given continuing reluctance to interview unmarried women in Asia.

Although there is plentiful evidence that early childbearing is correlated with various negative outcomes, rigorous research confirming a causal role for age at birth in producing these outcomes does not exist. Major global changes, such as increasing school enrolment during late adolescence, rising rates of labour force participation among young women, and rising HIV/AIDS prevalence among young women in Africa, are likely to have important implications for the transition to parenthood, but little is known about the implications of these trends for first parenthood.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

6. What is adulthood?

UNIT 24 LIFE SKILLS AND INDEPENDENT LIVING

OBJECTIVES

After going through this unit, you will be able to:

- Define life skills.
- Define independent living.
- Discuss the relationship of life skills and independent living.

The term '*Life Skills*' refers to the skills you need to make the most out of life.

Life skills are abilities for adaptive and positive behaviour that enable humans to deal effectively with the demands and challenges of life. This

concept is also termed as psychosocial competency. The subject varies greatly depending on social norms and community expectations but skills that functions for well-being and aid individuals to develop into active and productive members of their communities are considered as life skills. Life skills are usually associated with managing and living a better quality of life. They help us to accomplish our ambitions and live to our full potential.

Any skill that is useful in your life can be considered a life skill. Tying your shoe laces, swimming, driving a car and using a computer are, for most people, useful life skills.

The UNICEF Evaluation Office suggests that "there is no definitive list" of psychosocial skills; nevertheless UNICEF enumerates psychosocial and interpersonal skills are generally well being oriented and essential alongside literacy and numeracy skills. Since it changes its meaning from culture to culture and life positions, it is considered as a concept that is elastic in nature. But UNICEF acknowledges Collabourative for Academic, Social and Emotional Learning (CASEL) identified social and emotional life skills. Life skills are a product of synthesis: many skills are developed simultaneously by and in practice, like humor – Humor allows a person to feel in control of a situation and make it more manageable in perspective. It allows the person to release fears, anger, and stress & achieve a qualitative life.

For example, decision-making often involves critical thinking ("what are my options?") and values clarification ("what is important to me?"), ("How do I FEEL about this?"). Ultimately, the interplay between the skills is what produces powerful behavioral outcomes, especially where this approach is supported by other strategies.

Life skills can vary from financial literacy, through substance-abuse prevention, to therapeutic techniques to deal with disabilities such as autism.

Some of the important life skills identified through Delphi Method by WHO are:

- Decision making
- Problem solving
- Creative thinking/lateral thinking
- Critical thinking/perspicacity
- Effective communication

- Interpersonal relationships
- Self awareness/mindfulness
- Assertiveness
- Empathy
- Equanimity
- Coping with stress, trauma and loss
- Resilience

People think of learning as something that happens primarily in the classroom but our children learn how to “adult” by watching us, by being with us while we do our errands and by taking note of how we behave in any given situation. When they go off to live their lives we wonder how they will figure everything out. The following are thirty-three basic life skills that hundreds of parents agree young adults should have mastered by the time they leave us to lead their own lives.

1. They should know how to craft a handwritten note, place it in an envelope, address said envelope, stamp it and mail it. While we are on the topic of mail, they should be able to pick up a package from the post office. Tip: If you are mailing something oversized or heavy, it may need extra postage (let the nice mailperson at the post office weigh it).
2. They should know how to find their polling place and vote or if they are out-of-state they should be registered to vote by absentee ballot. This will require their mailing, addressing and stamping skills.
3. They should know how to use a phone for making phone calls, like calling to make a reservation at a restaurant. Texting is great but not always available and knowing how to communicate over the phone is an important life skill. Tip: If you text someone that you are standing at their door and they don’t respond, try ringing the doorbell.
4. They should know how to get cash because sometimes you need it. We all use less cash than we used to, but having a bit of cash on you is always helpful. Tip: You can get cash back from the grocery store if you use a debit card.
5. Some food items are sold by the pound, fish, deli meat and cheese to name a few. A young adult should have a rough idea what a pound of sliced deli meat looks like.

6. They should know where in the car the car manual is kept and that if there is an issue they should refer to the manual for guidance. They should be able to fill their tires with air, pump gas and know what to do in the event of a flat tire. Tip: Manual is usually in the glove box which is in front of the passenger seat.
7. They should be able to read a map and follow directions without using GPS.
8. They should know that if their stomach is upset or if they are recovering from a stomach flu, it is best to eat a bland diet for a few days which may mean no Doritos. They should be familiar with the BRAT diet (bananas, rice, apple, toast). Tip: hot water with lemon is very soothing.
9. They should be able to write and deposit a check which would require them to also know where to endorse a check.
10. They should know the basics of how to do laundry (darks-cold, whites-hot), where the detergent goes. Tip: cotton shrinks in the dryer and colors bleed in hot water.
11. They should know the basics of the dishwasher and that liquid dish detergent is not for the dishwasher and certain items can't go in the dishwasher. Tip: most items say somewhere on them if they are dishwasher safe.
12. They should know how to sweep with a broom.
13. They should know how to pack a suitcase and how to check the weather for their destination so they know what kind of clothes they need.
14. They should know their social security number by heart. They will need it-often.
15. They should know that Tupperware is NOT disposable, it is reusable.
16. They should have a copy of their insurance card and carry it with them at all times. You should have a conversation with them about your deductible.
17. They should know that if they park in a tow zone, there is a possibility that their car will be towed. Tip: leaving a note on the windshield asking the police not to tow your car-will not work.
18. They should know the basics of over-the-counter medications. Advil, Tylenol and Motrin are analgesics (they will treat mild to moderate pain and reduce fever). None of them should be mixed with alcohol. Follow the dosage directions on the bottle and take the smallest dose that helps you. Tip: If you have any questions

the pharmacist is a great resource and almost always happy to help.

19. They should know how to fill a prescription. Tip: Once again the pharmacist is a good resource.
20. They should know how to tie a suit tie. Tip: YouTube is a great teacher.
21. If you live in an apartment off campus, you may have to pay for your own utilities (electric, heat, air conditioning). Tip: Utilities can be expensive so pick a reasonable temperature for winter and summer and don't leave all the lights on.
22. They should know the very basics of cooking like how to bake a potato, boil water and how to open a can of soup and heat it up in a pot on the stove. Tip: you must remove the soup from the can and put it into the pot to heat.
23. They should know the basic shelf life of foods. A meal you cooked and refrigerated three weeks ago should be tossed. Tip: If in doubt, throw it out.
24. They should know how to change light bulbs and batteries.
25. They should understand that they may have to apply to many internships/jobs to get one. Tip: Get your resume done early.
26. They should know what does NOT go in a microwave (especially foil and metal).
27. They should know not to sit in an un-ventilated, closed garage with the a car running. This life skill is literally life or death. Tip: it could kill you.
28. They should know that when you put something hot or wet on most surfaces, you should use a trivet.
29. They should know when you tip and what percentage is the standard for what service.
30. They should be able to book their own flights, check their baggage and check-in to their flight.
31. They should know that "U" is not an acceptable form of "you" in work you hand in for your classes. Tip: Words in your academic work need to be spelled out.
32. They should have some idea how to do their taxes or at least know what paperwork they need to collect for someone else to do their taxes. Tip: There are a lot of online programs that make figuring out simple taxes easy.
33. They should know that the bathroom sink is not the place to toss food. It gets clogged easily. Tip: It's always helpful to have a plumber's number handy.

Independent Living

Independent living, as seen by its advocates, is a philosophy, a way of looking at society and disability, and a worldwide movement of people with disabilities working for equal opportunities, self-determination, and self-respect. In the context of eldercare, independent living is seen as a step in the continuum of care, with assisted living being the next step.

In most countries, proponents of the IL Movement claim preconceived notions and a predominantly medical view of disability contribute to negative attitudes towards people with disabilities, portraying them as sick, defective and deviant persons, as objects of professional intervention, as a burden for themselves and their families, dependent on other people's charity. These images, in the IL analysis, have consequences for disabled people's opportunities for raising families of their own, getting education and work, which, in turn, result in persons with disabilities making up a large portion of the poor in any country. With the rise in Senior population, Independent Living facilities have risen in popularity as an option for aging citizens.

Older adults able to take care of themselves and live independently as they age, including normal tasks of daily living such as eating, bathing and taking medication.

The Independent Living (IL) Skills program is designed to help people with disabilities in learning new and healthy independent living skills. Our staff works directly with the consumer to teach these new skills with hands-on instruction. Together they write an independent living plan to meet individual needs, such as self-esteem, meal planning, financial management, obtaining housing and transportation, and much more.

Independent Living Skills Assessment Programme

Independent Lifestyles recognizes that consumers have a variety of IL needs as well as differing abilities and barriers that may keep them from living as independently as possible. Independent Lifestyles designed the ***Independent Living Skills Assessment***. This evaluation tool is comprehensive, asset-based, and aims to highlight the consumer's strengths and abilities. The assessment is based on consumer accomplishment of tasks through direct and indirect observation, self-assessment, and interviews. The following categories are included on the assessment:

- Personal Hygiene
- Dressing and Clothing Care
- Health Care
- Cooking, Eating, Nutrition
- Home Management and Home Safety
- Financial Management
- Personal Growth, Awareness, and Problem Solving
- Community Access

Upon completion of the assessment, a thorough summary of the evaluation and recommendations are provided. The assessment is used only as a guide and may be altered depending on the individual needs of the consumer. The Independent Living Skills Assessment may be purchased in full or as selected groups of modules to fit individual needs.

Check your progress

Notes: a. Write your answer in the space given below.

b. Compare your answer with the one given at the end of the unit.

7. What are life skills?

……
……

8. How is independent living seen by its advocates?

……
……

UNIT 25 CAREER CHOICES

OBJECTIVES

After going through this unit, you will be able to:

- Define career.
- Differentiate various careers.
- Understand how to choose a career.

A **career** is an individual's metaphorical "journey" through learning, work and other aspects of life. There are a number of ways to define career and the term is used in a variety of ways. The word career

is defined by the Oxford English Dictionary as a person's "course or progress through life (or a distinct portion of life)". In this definition career is understood to relate to a range of aspects of an individual's life, learning and work. Career is also frequently understood to relate to the working aspects of an individual's life e.g. as in career woman. A third way in which the term career is used to describe an occupation or a profession that usually involves special training or formal education, and is considered to be a person’s lifework. In this case "a career" is seen as a sequence of related jobs usually pursued within a single industry or sector e.g. "a career in education" or "a career in the building trade".

The progress and actions taken by a person throughout a lifetime, especially those related to that person's occupations. A career is often composed of the jobs held, titles earned and work accomplished over a long period of time, rather than just referring to one position.

While employees in some cultures and economies stay with one job during their career, there is an increasing trend to employees changing jobs more frequently. For example, an individual's career could involve being a lawyer, though the individual could work for several different firms and in several different areas of law over a lifetime.

Career Choice is the selection of a particular path or vocation in terms of career. This is usually influenced by parental guidance, vocational counseling, and training opportunities. It is also affected by personal preference and identification with figures and role models.

According to Behling and others, an individual's decision to join a firm may depend on any of the three factors viz. objective factor, subjective factor and critical contact.

- **Objective factor theory** assumes that the applicants are rational. The choice, therefore, is exercised after an objective assessment of the tangible benefits of the job. Factors may include the salary, other benefits, location, opportunities for career advancement, etc.
- **Subjective factor theory** suggests that decision making is dominated by social and psychological factors. The status of the job, reputation of the organization and other similar factors plays an important role.
- **Critical contact theory** advances the idea that a candidate's observations while interacting with the organization plays a vital role in decision making. For example, how the recruiter keeps in touch with the candidate, the promptness of response and similar

factors are important. This theory is more valid with experienced professionals.

These theories assume that candidates have a free choice of employers and careers. In reality the scarcity of jobs and strong competition for desirable jobs severely skews the decision making process. In many markets employees work particular careers simply because they were forced to accept whatever work was available to them. Additionally, Ott-Holland and colleagues found that culture can have a major influence on career choice, depending on the type of culture.

When choosing a career that's best for you, according to US News, there are multiple things to consider. Some of those include: natural talents, work style, social interaction, work-life balance, whether or not you are looking to give back, whether you are comfortable in the public eye, dealing with stress or not, and finally, how much money you want to make. If choosing a career feels like too much pressure, here's another option: pick a path that feels right today by making the best decision you can, and know that you can change your mind in the future. In today's workplace, choosing a career doesn't necessarily mean you have to stick with that line of work for your entire life. Make a smart decision, and plan to re-evaluate down the line based on your long-term objectives.

How to Make a Career Choice?

With thousands of options, how will you pick a career that's right for you? If you don't have any idea what you want to do, the task may seem insurmountable. Fortunately, it isn't. Put enough thought into it, and you will increase your chances of making a good decision.

1. **Assess Yourself:** Before you can choose the right career, you must learn about yourself. Your values, interests, soft skills, and aptitudes, in combination with your personality type, make some occupations a good fit for you and others completely inappropriate. Use self-assessment tools, often called career tests, to gather information about your traits and, subsequently generate a list of occupations that are a good fit based on them. Some people choose to work with a career counselor or other career development professionals who can help them navigate this process.
2. **Make a List of Occupations to Explore:** You probably have multiple lists of occupations in front of you at this point. These are generated by each of the self-assessment tools you used. To keep yourself organized, you should combine them into one master list. First, look for careers that appear on multiple lists and