



LIFE SPAN PERSPECTIVE ON DEVELOPMENT



Notes

Anita is 35 years old. One day she was looking at her childhood photographs and alongside talking to her 60-year-old mother. Her mother told her how soon she started recognising her mother; started walking on her own; uttered her first words; started going to school; first few years of education. These issues of growth and development come into the lives of all. These were nostalgic for Anita. She told her mother about her growing up years; her friends; her career choices. She also spoke about how different her life is now from those days. Her day is now occupied raising her three-year-old daughter, an infant and taking care of aging members of her family. Her life concerns seem to be changing all through her life.

Anita further wondered how her newborn infant is growing and will soon change so much to become a child with a seemingly different set of abilities? It further intrigued her how children are different from adult and how they attain adult-like capacities in due course of time? These are questions that can be answered by understanding growth and development. It has been observed that children in a similar age group go through similar changes and this makes some predictable patterns in the growth and development. These patterns are affected by several factors both maturational and contextual. In addition to that, our human abilities and milestones in each of the age ranges keep evolving over our entire lifespan. In this lesson let us study what is meant by growth and development and what are the principles guiding them. Let us also study in detail about the factors that affect growth and development.

Human Development

**LEARNING OUTCOMES**

After studying this lesson, learner :

- explains the principles of development; and
- relates to the factors that influence development across different stages of life.



Notes

12.1 GROWTH AND DEVELOPMENT

We often use the words growth and development rather interchangeably. But do these two mean the same or are they different? Let us read about growth and development in the following sections.

12.1.1 What is Growth?

Growth refers to quantitative changes in the body. We can identify whether growth is taking place in a child or not by the increase in the child's height and weight. In addition to those indicators of growth also include changes in body structure and body proportions. Although changes in all domains of development take place but any changes in the physical development of the child becomes most apparent to the human eye. Growth continues to take place over time. Even when people stop to grow in height, the structure and proportion of the body keeps changing during entire life span.

One of the significant features of growth is that these changes are measurable. It is important to note that growth is not uniform across life periods and all parts of the body do not grow at the same rate. Rapid physical growth takes place in the first two years of life. The weight of newborn child can range from 2.4 kg to 3.2 kg. On an average, increment in weight is 2.0-2.5 kg per year. In fact, between birth and first birthday, well-nourished children can undergo a 50 percent increase in height. During the first and second year, the height of infants increases approximately by 40 percent and 60-75 percent respectively for boys and girls. Boys are ordinarily heavier and taller than girls during infancy as well as during toddlerhood. In middle childhood, one may experience periods of plateau growth where growth is stable. Later, during adolescence, again one experiences a period of growth spurt where growth in height and weight are rapid. Height and weight charts are available to assess health and physical development in children. These charts should be especially maintained for those who fall ill frequently. This helps to monitor their growth and provide timely inputs.

You must have observed that body proportions of children also undergo changes over a period of time. Head of a newborn looks bigger as compared to the rest of the body. The top of head appears to be large and the facial area remains small. Later owing to the changes in the body proportions, the head does not look that big. Throughout infancy and toddlerhood, the lower portion continues to remain underdeveloped and smaller. The size of head increases in size and accounts for one-fourth of a child's length by the age of 3 years. However, functional development of brain continues into adolescence. Likewise, at birth newborns arms appear to be longer in proportion to their legs.



Notes

12.1.2 What is Development?

Development refers to qualitative changes in the body as well as changes in behaviour and attitude. It is difficult to measure development as these changes are qualitative in nature. Physical growth is measurable quantitatively; however, certain changes such as cognitive and socio-emotional may not be easily measurable. These can only be measured qualitatively by the quality of changes that occur in different domains of development. Development is a rather broader term that entails overall changes in the body and mind. It is continuous process that continues throughout the entire life span of an individual. It is said to be more complex than growth. It is understood by the change in quality of relationships, emotions, reasoning and so forth.



INTEXT QUESTIONS 12.1

Put the following words into the most appropriate columns based on whether they are associated with growth or development-

- Quantitative
- Qualitative
- Growing tall
- Becoming heavier in weight
- Change in body proportions
- Maturity
- Management of emotions

Human Development

- Continues throughout lifespan
- Disappearance of baby teeth



Notes

Growth	Development

Match the following

- | | |
|-----------------------------|-------------------------|
| 1. Quantitative | a. Lifespan |
| 2. Qualitative | b. Growth |
| 3. Height and weight charts | c. Assessment of health |
| 4. Continuous development | d. Development |

12.2 PRINCIPLES OF DEVELOPMENT

In the previous section, you have already read about growth and development. In this section let us study what are the general principles that govern development.

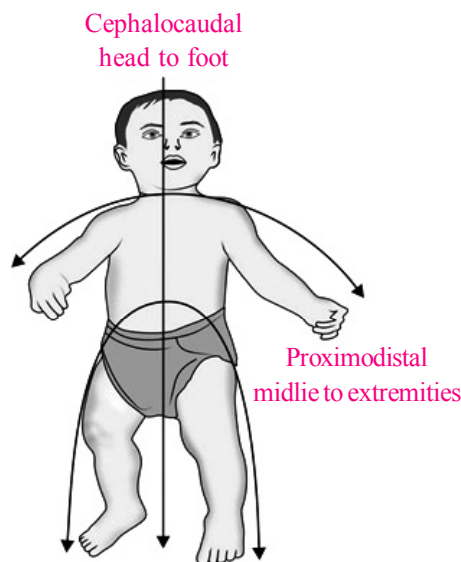
12.2.1 Development is continuous

Development happens continuously and gradually over a period of time. From the moment of conception till death the individual is continuously changing. You must have observed that as children are born, they begin to slowly change in different dimensions of development. Development is not sudden; rather there are intermediate steps that lead one to fully attained capacities. In terms of language development, children begin by making cooing sounds and thereafter start to babble. Soon after, they start using one word to communicate what they want. By the beginning of the second year they start using two word combinations to state what they want to say. Their language development continues from here to making full sentences by the mid of second year. The complexity of language continues as children grow up until they attain complete mastery over human language. These changes that take place over time may not be noticeable on a day-to-day basis but they are taking place gradually and do not stop over time

12.2.2 Development is sequential and follows a pattern

Development of all human beings follows a universal or similar pattern and direction. All children follow these developmental patterns. This sequential pattern can be seen in two directions

- i. Cephalo-caudal sequence: This means that development takes place from head to toe i.e. an individual child begins to grow from the head region to the toe. This is why their heads develop first, followed by trunk and legs.
- ii. Proximodistal sequence: This means that development proceeds from the central part of the body to peripheries or outer parts of the body. This can be observed in the fact that children first attain control over their arms and later on their hands. Likewise children's first teeth erupt towards the centre of their bodies and later the teeth towards the sides of the mouth appear.



There are predictable patterns in all domains of development. In the text above one may read about these patterns in development of language. In cognitive development too one may see that initially children's thinking is bound to concrete objects in their environment but later they can think in terms of abstract ideas as well.

12.2.3 Development proceeds from general to specific

In all phases of development, changes proceed from general to specific. To understand



Human Development



Notes

this better, consider this example. When a rattle is shown to a young child, the child first moves his/her entire arm in appreciation and excitement. The child moves the entire arm with little precision in order to catch hold of the rattle. This is a more general ability to move the entire arm. It is slowly that the child masters the specific ability to co-ordinate his/her eye-hand movements and grab the rattle with the fingers of his/her tiny hands. Thus, grabbing is more specific motor ability.

12.2.4 Development is predictable

One may predict the pattern and rates of development for periods of growth and development in children. It is easily predictable what milestones in different stages of development can be expected from children of different ages. Likewise, the steps in development may also be predicted. For instance, children in the age range of 9 months to 15 months may be expected to start walking on their own without any support from others. In addition to this, there is predictability in the pattern wherein children first gain control over their necks, start sitting with support, start crawling, stand with support and eventually walk without support. These patterns are also observable in other domains of development. For example, children understand and display basic emotions during the first two years of life and by the end of two and half year begins to understand self-conscious emotions as well. Their emotional competencies develop further over childhood and adolescence. Maturity to fully understand and manage emotions continues to develop until adulthood; ending with wisdom in old age. Thus, attainment of emotional understanding is also predictable, just like development in other domains.

12.2.5 Development occurs at different rates

It is notable to mention here that development occurs at different rates for different domains. For instance, physical development is rapid during the first few years of life until it slows down and again picks up pace during adolescence. Development during other domains may not follow the same trajectory. For instance, there is critical period for development of language. Children who are exposed to language inputs when they are under the age of six acquire language better than those who are not given enough opportunity to learn language at this age. There may be other times when development in other domains may happen rapidly. In addition to that, different parts of the body may not develop at the same time. For instance, children gain height to attain adult-like height by the end of adolescence and later do not gain height. However, they may continue to add weight and muscle mass.

12.2.6 There are individual differences in development

There are certain expected patterns of development for a particular age range, which are called milestones of development. These milestones are usually achieved by most of the children in a particular age range. For instance, if one expects children to start communicating their wants and needs by the age of 3, then one must expect that within a normal age range all children will be able to do this. But no two individuals are alike and each child is unique. One child may start walking early and the other may start walking later than most of her/his counterparts. Therefore, one must keep in mind that although sequence of development is uniform and predetermined but the rate of development may differ for different individuals. The level of competence attained by each individual may also differ. Some children excel in language development but lag in physical competencies. On the other hand there may be children who may not do very well in cognitive attainments but are physically very sturdy and athletic.

12.2.7 All aspects of development are interrelated

All domains of development are related to each of the other domains and a child develops as a unified whole. Each domain of development affects the other and is, in turn, affected by the other. Any lag in one domain is likely to affect other domains. For instance, if a child lags in communication and language development then the child may not understand how to maintain healthy social relationships with her/his peers. This may impact the interaction that the child will have with other children. They may not involve this child in their play. This will further impede the child's cognitive, emotional and physical abilities. This impact may vary sometimes serious and permanent and sometimes minor and temporary.



INTEXT QUESTIONS 12.2

State whether the following statements are true or false

- Domains of development are not related.
- Development follows a predictable pattern.
- All children are alike and by a certain age all must attain same abilities.
- Physical development during early years of life and puberty is rapid as compared to other stages of life.

Notes



Human Development

12.3 FACTORS AFFECTING GROWTH AND DEVELOPMENT



Notes

You have already studied about growth and development and what are the principles of development. Let us now study about the factors that affect growth and development. Read the case studies given below and answer the questions that follow

Case Study: Anu and Mani are friends. Anu understands that sometimes Mani gets angry on seemingly everyday issues but Mani does not herself recognize her emotional outburst; neither can she deliberately control her anger pangs.

What can you say about the ability of the two friends in understanding emotions?

.....

.....

.....

.....

.....

What can be the probable causes of these differences in the two friends' competencies in management of emotions? Was Anu born with an inherent capability to understand and manage emotions well or did she pick this up from her environment?

.....

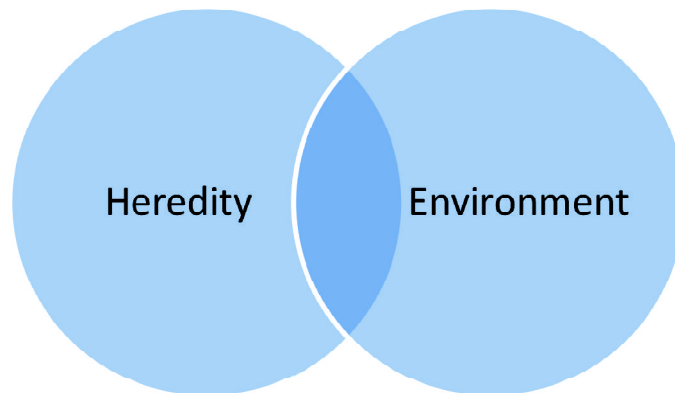
.....

.....

.....

.....

The case given above builds upon the fact that development is a product of both heredity as well as environmental factors. Some psychologists believe that heredity impacts our development more than the environmental factors and vice-a-versa. There is no clear cut answer to this nature versus nurture controversy. Our genetic make-up and the inputs we get from the environment, both impact us and make us what we are. Let us explore these factors in greater depth in the section that follows.



Notes

12.3.1 Influences of Heredity on Development of Individuals

Are you like your parents or grandparents in many ways? Do your facial features look like any of them? Have you inherited your parents' height, whether they are tall or short? Have you ever heard your parents telling you that they seem to be having similar medical problems such as asthma, heart ailments and so forth, as their parents had at their old ages? Is there continuity between generations from a similar family tree? How does this happen?

One may inherit characteristics from both their parents. This happens as the child receives genes (which are structural units of chromosomes) from both the parents at the time of conception. Scientists believe that nothing can be added or subtracted from this genetic endowment. This genetic inheritance affects all aspect of our growth and development. Genes are found to influence an individual's height, weight, colour and quality of our skin and hair, even the susceptibility to diseases and medical conditions that one may have at different ages especially during old age. This genetic endowment seems to be tied to maturation of the body and the brain which influences growth and development.

In addition to these aspects, the sex of the baby is also determined at the time of conception. Every individual receives 46 chromosomes-23 each from the father and the mother. The sex chromosomes passed on by the father determine the sex of the child. The sex of the child gives rise to many variations that are related to sex differences. In the earlier section of the lesson it was mentioned that boys are generally taller and heavier than girls. The age for beginning of pubertal changes is also slightly different for boys and girls. While girls begin to attain height and other puberty related changes earlier than boys; boys continue to gain height and muscle mass much later than girls. These differences may be attributed to inheritance of specie-specific patterns of growth and development.

Human Development



This is not to say that growth and development is driven only by hereditary make-up of individuals. In fact, genetic predispositions can be overridden by environmental influences. Let us read how environmental or contextual factors affect development.

12.3.2 Influences of Environmental factors on Development of Individuals

We all may have observed that a child's immediate environment of the family and home affects the child after she/he is born. But do you know that even before the child is born the child gets affected by the environment around her/him. This environment is however not external but the environment within her/his mother's womb. Let us read how the environment in which the child grows before birth affects her/his development.

- **Pre-natal Environment**

Many environmental factors such as nutrition taken by the mother, her general state of physical and mental health, her age, and exposure of the unborn baby to environmental pollution, x-rays and drugs taken by the mother during pregnancy affect the child.

If a pregnant mother keeps good health and eats nutritious and balanced food, this affects the child in the long run. Not just the baby born is healthy but also in later life, the child is likely to keep good health. On the other hand, if the mother is poorly fed, this may impact the unborn child negatively. The in-vitro growth will be restricted; the chances of the newborn child being underweight and with reduced motor and cognitive capacities become high. Mother needs to remain physically healthy and active during pregnancy. This protects the child's physical well-being in the womb. Apart from general physical state of the mother, the mother should remain happy. When pregnant mothers are upset and experience emotions like unhappiness, rage, fear and anxiety, this affects the mental states of the child as well. Such mothers are more likely to deliver premature, low birth weight, hyperactive or irritable babies.

- **Maternal health and age during pregnancy**

Besides nutrition and physical-mental states of the mother, if mother contracts any disease during pregnancy, that adversely affects the unborn child. Maternal age is also likely to impact the foetus. Reproductive organs of mothers who are less than seventeen years of age are not fully mature and the hormones required for reproduction are not at the optimum level. Likewise, after the age of 35, hormonal activity gradually decreases which may lead to complications in the

foetus. Women over 40 run the risk of delivering children with chromosomal abnormalities.

- **Potentially harmful environmental factors during pregnancy**

Environmental pollution such as absorption of lead from car exhausts, inhaling paint from flaking walls and factories affect prenatal development negatively. Continued exposure to these may lead to prematurity, low birth weight and brain damage in the foetus. These may also lead to physical defects in the unborn child. Along with these, pregnant mothers should also avoid unnecessary exposure to x-rays as these too may affect the physical and mental development of the foetus. In addition to these, there are some antibiotics, anticoagulants, narcotics, tranquilizers that may harm the unborn child. These drugs should not be taken without doctor's prescription. Along with these, drinking alcohol and smoking may lead to mental retardation, physical deformities, sleep disturbances and congenital heart diseases in children if consumed. These also increase the chances of lower birth weight in the newborn and premature birth. In fact caffeine and tannin consumed through tea and coffee if not taken in moderation may also lead to negative effects on the foetus.

There are some other contextual factors that affect the child after birth. These include socio-economic status of the child's family, their living conditions, family structure, child rearing practices and the society at large.

- **Socio-economic background**

Socio-economic background of a child's family impacts the child in both the short and the long run. Socio-economic background of the family is an indicator of different economic resources and the living standards of the family vis-à-vis the child. A child in a lower socio-economic status family as compared to those from middle or higher socio-economic families, is more likely to have poor nutrition, unhygienic living conditions, delayed medical treatment, compromised educational and overall stimulation at home. All these affect a child's growth in most of the domains of development. As already stated above, all domains of development are interrelated, so poor nutrition not just impacts the physical well-being but also impairs the cognitive, language and socio-emotional development negatively.

- **Family Structure**

Urbanization and migration have brought about changes in the structure of family.



Notes

Human Development



Notes

There is an increasing number of families in the contemporary times which are nuclear in nature. The kind of social environment provided to the children as they grew up in joint family set ups is absent in the nuclear family set ups. This social environment not only includes distribution of family resources among more members but also the set of traditions, values and culture. Furthermore, since more and more women are joining the workforce outside home, this has also changed the role of family members in the life of growing children.

- **Child-rearing practices**

You may have observed that different parents interact and deal with their children differently. Some parents are very authoritarian and make strict rules and regulations that the children must follow. On the other hand, some parents may be overly permissive, letting children do whatever they wish to do without any monitoring or control exercised by the parents. These are two different types of parenting styles. In this continuum there may also be parents who let the children make decisions for themselves but talk to their children about the pros and cons of every situation and help them arrive at their choices but after a dialogue with them. This gives their children a sense of autonomy and responsibility for what they choose to do. These parenting practices may have positive or negative impact on the child's development. Balanced attitude of the parents and other family members towards children creates an environment where children learn to become confident, have high self-esteem and find people around them trustworthy. This is not just important for social and emotional development but also for all the related domains of development. On the other hand, if children grow up in unfavorable environment, this is going to affect their personal and social adjustment negatively. They may show a lag in all other domains of development as well.

- **Siblings and Peer group members**

Apart from parents, children's growth and development also get strongly influenced by their siblings and peers. Siblings at home become playmates and interaction with them provides context to learn so many lessons. All these contribute in the cognitive, language, socio-emotional, moral and physical development. Children learn to distribute things among themselves; they learn to share and fight for things; they also learn to look after and support each other and so forth. Furthermore, at times siblings also develop rivalry with each other, this too affects children.

Beyond the confines of the home and one's immediate family, how well a child is accepted within the peer group deeply influences her/his development, especially self-concept. Children learn to behave appropriately with their peer group. Friends provide sources of emotional support for each other. In company of friends as well children learn to share, cooperate, become autonomous, practice skills of leadership and competition. Hence, the role of peer group as one of the factors that influence development cannot be undermined.

There are other contextual factors such as gender, media that too affect development in different domains.



Notes



INTEXT QUESTIONS 12.3

Multiple choice: Select the best answer for each question

1. The primary cause of developmental change is
 - a. Maturation
 - b. Learning
 - c. Experience
 - d. The product of both maturation and experience

2. Pre-natal development is not affected by
 - a. Mother's nutrition
 - b. Environmental pollution
 - c. Peer relations
 - d. Mother's emotional state



ACTIVITY

Talk to a grandparent and a parent each who grew up in joint/nuclear family set up about their experiences of growing up. In particular discuss their interaction with their parents and other members of the family. Ask them to reflect and share how their patterns of interaction influenced their ways of behaviour, personalities (including temperament) and sense of being (including aspirations, ways of dealing with stress etc).

Human Development

12.4 LIFESPAN DEVELOPMENT



Notes

You must have heard from people sharing about their concerns based on the stage of life they currently inhabit. This is indicative of the fact that human lifespan can be divided into stages. Human lifespan can be followed in a chronological format that begins from birth (or even conception) and is recognized till adulthood and old age.

Most Psychology and Child Development texts divide human lifespan into the following stages-

Table: Stages of Human Lifespan

Stages of Human Development	
Conception to birth	Prenatal
0-2 years	Infancy
2-3 years	Toddlerhood
3-6 years	Early Childhood
6-8 years	Middle Childhood
8-11 years	Late Childhood
11-18 years	Adolescence
18-40 years	Early Adulthood
40-65 years	Adulthood
65+ years	Old Age

As you can see in the table, from conception till birth, the foetus grows in the womb of the mother. This period is called the prenatal stage. After birth, from 0-2 years children are in the stage of infancy. From 2-3 years they are considered to be in toddlerhood. From 3-6 years of age children inhabit the stage of early childhood and from 6-8 and 8-11 years they are considered to be in middle and late childhood respectively. Adolescence begins by the age of 12 in most societies and continues till the age of 18 years. Early Adulthood emerges at the age of 18 years and continues until the age of 40. From 40 to 65 years of age people continue to be in adulthood; following which they enter the stage of old age. It is important to note that as modern life styles are

changing, people do not strictly fit into the age brackets mentioned above. These age ranges are rather fluid. One may see children entering into the stage of adolescence rather early and delay responsibilities of adulthood.

Until recently it was widely believed that development stops at adolescence, but now we know that even very old people continue to grow and develop. The lifespan development perspective proposes that people continue to change throughout life as well as stay the same, from conception to death. This means that there is an internal sense of continuity within each individual where their earlier life stages impact their later life stages. In consonance to that, they adapt to each new situation and concerns of the new stages that they inhabit. Baltes have identified the following key principles for understanding the lifespan approach. These are as under-

- i. **Development is lifelong:** As life keeps changing, one encounters new situations each day. This requires a person to adapt and change as per the demands of the new situations. For example, changing a new school, a new job and so forth. All such changes require a person to change. But there is continuity in the manner we change. Each period of lifespan is affected by what happened before and will affect what is to come.
- ii. **Development is multidirectional and involves both gain and loss:** Development proceeds in more than one direction. As people gain in one, they may lose in another. Children grow up in one direction i.e., they grow up in size and abilities. However, as adolescents typically gain in physical abilities, they lose their ability to learn language. Although vocabulary continues to increase throughout adulthood; other abilities such as ability to solve unfamiliar problems may diminish.
- iii. **Relative influences of biology and culture shift over the lifespan:** As we have already read in the text above, development is influenced by both biology and culture, the balance between them changes over time. Biological influences such as muscular growth, strength and coordination becomes weaker as the person gets old, but cultural supports such as education, relationships, technological support from the environment helps to compensate.
- iv. **Development is characterized by plasticity:** Throughout life, development shows modifiability. This is all about our ability to change. Many abilities such as memory, strength, endurance keeps changing over the lifespan and we also have the ability to recover physically and mentally from injuries and accidents.
- v. **Development is influenced by the historical and cultural context:** Each



Notes

Human Development

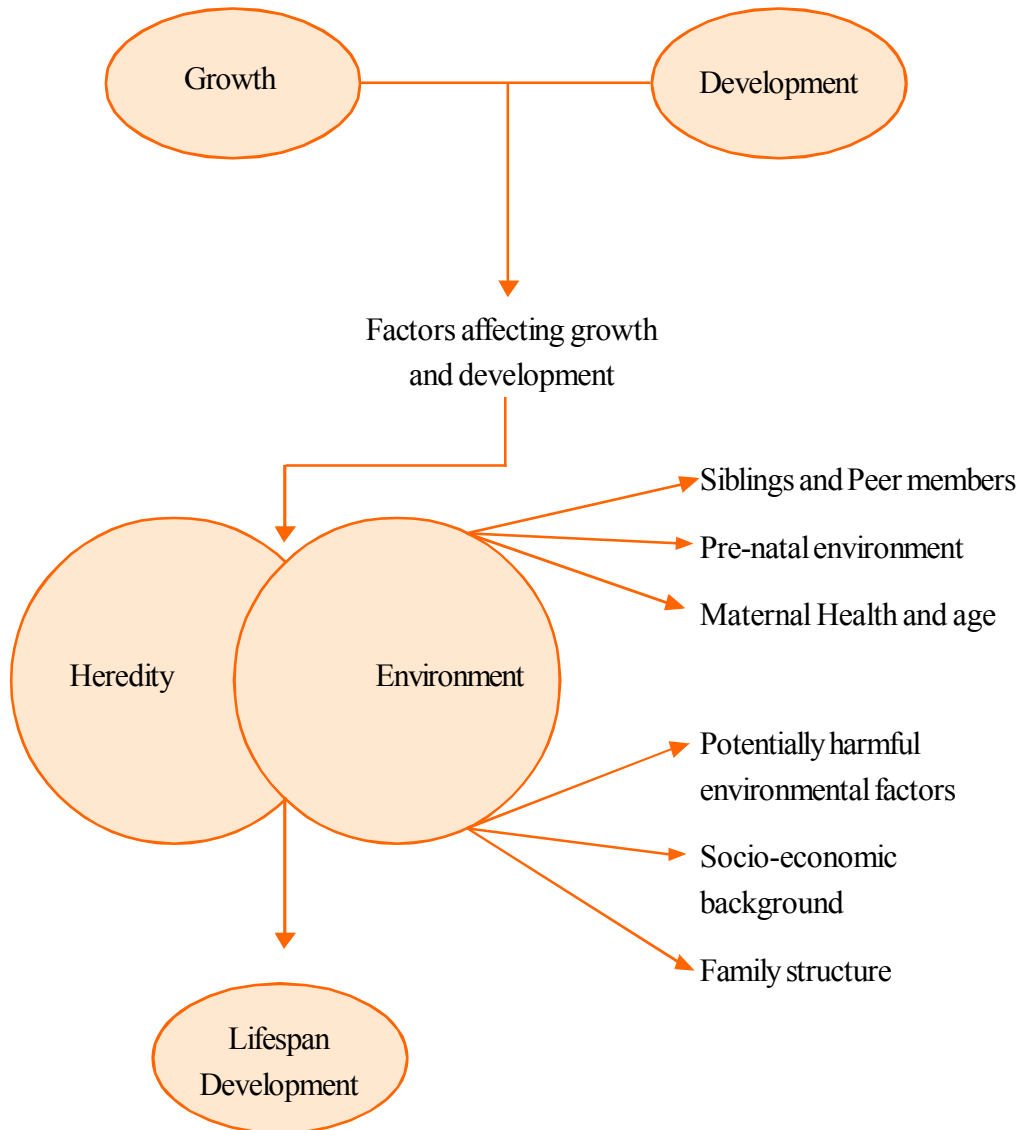


Notes

person develops within multiple contexts including circumstances or conditions defined in part by biology, in part by place and time. In addition, to that age graded (specific age group an individual is in such as toddlerhood, adolescence) and non-normative life influences such as those experiences that are unique to each human being also influence our development.



WHAT YOU HAVE LEARNT





TERMINAL QUESTIONS

1. State the differences between growth and development.
2. Elaborate different principles of development with examples from each of the domains.
3. Each child's development is different and this makes each child unique. Do you agree or disagree with this statement? Support your answer with suitable examples.
4. Make a web of factors that influence development. Discuss two hereditary and environmental factors each that affect development.
5. Explain lifespan development taking examples from your own life changes.
6. What are some of the changes that take place in child's physical development and growth, and how can they be measured?
7. What is the difference between growth and development, and how is development measured?
8. What are the general principles of development and how does the process of development occur in a sequential and patterned manner, following a cephalo-caudal and proximodistal sequence?
9. How does lag in one domain of development affect other domains and child's overall development?
10. What are the key principles of the lifespan development perspective proposed by Baltes?



Notes



ANSWERS TO INTEXT QUESTIONS

12.1

Growth and Development

Growth

Development

Quantitative

Qualitative

Human Development



Notes

Growing tall

Maturity

Change in body proportions

Continues throughout lifespan

Becoming heavier in weight

Management of emotions

Disappearance of baby teeth

Match the Following

Answers

1-b

2-d

3-c

4-a

12.2

Principles of Development

(a) False

(b) True

(c) False

(d) True

12.3

Multiple choice

1. d

2. c