Unit 1 Essay

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Required Question: What Are the Significant Physical and Physiological Changes That Occur in Infancy?

All person's formative years are the most significant in life; they are marked by love, kindness, and tenderness. A child's capacity for achievement, success, and happiness depends heavily on their environment. It is very important to give a child good thing to do in their early years. At this age, a child's brain is especially open to harm because it hasn't had much experience. Even though they are different from child to child, the important parts of mental activity related to the outside world after childhood, which can be thought of as the reality outside of the person who starts each complicated mental process, are mostly consistent with how the nervous system works. The parents' socioeconomic status and how close they are to their children is an example of an outside factor that can affect how the brain develops in early childhood. Baby heads and necks develop from the top down in the early stages of growth. When babies are born, their neck muscles are not developed enough to support the head. Babies and toddlers need to learn how to move, balance, use fine motor skills, and work together as they grow up. Infants roll over and crawl when their large muscular control abilities begin to develop. As small muscles grow in the fingers, they can hold and pick up things. The exact age at which all infants should be able to grasp items and hold their heads up unassisted is unknown. A kid's physical growth is influenced by various factors, including the child's unique characteristics, the family's values, and the family's financial means. Developmental milestones are often reached at similar ages for infants and toddlers. Around the times shown in the chart below, newborns and toddlers typically learn and accomplish milestones. Traditional developmental theories emphasize the enormous growth that occurs during childhood and adolescence. The lifetime approach pays attention to changes in development at all phases of life and focuses on

differences between childhood and adulthood (p, 52). Some of the most significant changes during childhood involve the brain's growth and transformation and the development of other areas of the nervous system. Although the brain develops slowly from infancy, it experiences several fascinating changes.

2. The Relationship Between Genes, Chromosomes, and DNA

Each human cell's nucleus contains DNA, also known as deoxyribonucleic acid, which gives chromosomes their structure (treads). DNA is a complicated molecule with the shape of a helix and contains information. Genes are how hereditary information is conveyed. DNA segments are made up of small lengths. By aiding in cell production, they support the body's normal functioning (p. 160). Chromosomes are lengthy, coiled-up segments of DNA. The human genome is thought to have thousands of chromosomes. Each gene comprises a specified number of base pairs that each code for a distinct trait. As a result, genes are either chromosomal components or specific DNA nucleotide bases.

DNA consists of more than just the genetic material we receive from our parents. Nucleic acids offered the initial understanding of DNA's structure. Except for sperm and eggs, every cell in the human body possesses chromosomes (p. 43). Genes are hardy and have other properties besides just working together. Mitosis, meiosis, and fertilization are the three main processes involved.

DNA must be replicated for genetic material to be passed down from generation to generation. DNA must be repeated within a cell and passed onto offspring for reproduction to occur. This replication of DNA takes place in a semi-conservative manner. The same DNA strand can be divided into two molecules, creating two new DNA strands. Furthermore, it is derived from the species. When two reproductive cells fuse to become one, each chromosome is

present in two copies in each reproductive cell. After a cell divides and its offspring multiply more than once, every cell with a pair of chromosomes becomes an adult.

3.What Is a Genotype, and What Is a Phenotype

Although genotype and phenotype are related, they are not the same thing. Every living thing has a unique genotype or set of genes that code for a unique genetic identity that can be passed down through the generations. There are both homozygous and heterozygous genotypes. Homozygous genotypes have two copies of the same allele. The combination of genetic information and environmental factors known as phenotypes affects how an organism looks. Genotypes influence phenotypes. Their genotype shows what genes they got from their parents, and their phenotype shows what traits they have. The genetic makeup of our body is known as our genotype. Phenotypes and genes are not always fully correlated. Some materials' properties will only sometimes be prominent. A person's height, weight, or hair color, as well as their personality or IQ, could serve as barriers (p. 167). A person's diet, level of activity, smoking, and other habits are often affected by their environment. In addition to these, the environment can influence phenotypic traits. Genomic information is passed from one generation to the next without being changed by the environment or how inheritance works. When an organism reproduces sexually, it gets two alleles. This sets its genotype at the time of conception. When these animals breed, one of these alleles is passed down to the progeny. However, the environmental influences that affect phenotypes are not inherited. They can only be found in the next generation if the right combination of genes and the environment happens again. In the same way, that different genotypes can lead to the same phenotype, the same genotype can also lead to different phenotypes. Therefore, regardless of their genotype, identical twins might have phenotypes that are different from one another.

4. ***The Methods Used by Behavior Geneticists To Study Heredity's Influence On Behavior***

In behavioral genetics, the goal is to understand how differences in human traits and development are influenced by heredity and the environment. This genetic study studies twins or adopted individuals (p.48). Behavioral geneticists use various methods and approaches to figure out how genes affect traits and characteristics of the mind. Behavioral geneticists rely on evidence of environmental influences on personality. The text reading shows that twin studies are a common way of identifying personality characteristics. By comparing the behaviors of groups of identical twins with groups of fraternal twins, genetics has taken advantage of the fundamental fact that identical twins are more genetically similar (p. 49). Twin studies are critical to understanding the nature versus nurture issue. Behavioral geneticists use many different methods and approaches to figure out how much genes affect personality traits. Behavioral geneticists use data to support the idea that the environment influences personality. Twin studies, a common technique, can be used to identify personality differences. Twin studies must be used to analyze the nature vs. nurture debates. Twins are a natural experiment that happens in human families, and they are the best way to show how biology affects human appearance and behavior. Researchers are interested in twins whose circumstances differ regarding genetic similarity or environmental stability. To find out if identical and fraternal twins are related, it is essential to study twins to see if they have any biological differences.

5. ***Three Examples of Abnormalities In Genes and Chromosomes.***

Chromosome abnormalities may be structural or numerical. Chromosomes with structural issues have one or more changes to their structure. A numerical abnormality is when a person has more than one pair of chromosomes or one missing chromosome. Some chromosomal abnormalities can be found during prenatal screening and testing, but not all. There is always a

possibility that something will go wrong with the chromosomes during the production of an egg or sperm or the early phases of a baby's development. Genetic mistakes likely happen because of the mother's age and a few environmental factors. Sperm and ovum can mix in some cases; however, they may not have all 23 chromosomes. Number anomalies: Monosomy is a condition in which one pair of chromosomes is missing. An individual has trisomy if they have more than two chromosomes, unlike a couple. Different kinds of defects can lead to conditions like Down syndrome, which causes babies to have mental problems, trouble learning, and weak muscles. Down syndrome is also called trisomy 21. Chromosome 21 is present in three rather than two copies in individuals with Down syndrome. One type of monosomy is called Turner syndrome, which is caused by the lack of a single chromosome. Down syndrome is the most prevalent genetic cause of intellectual disability. Additionally, certain physical traits characterize it (p. 46). Another chromosome's structure can change as a result of various structural defects. Most of the time, aberrant chromosomes develop in eggs or sperm by accident. In these situations, an anomaly affects every cell in the body. Some cells may only have the problem after conception, while others may have the problem but not those cells. The treatment may improve a person’s emotional behavior and quality of life, but it may not eliminate these problems (p. 46).

6. Emotions in Infants

Let's start by defining a person's emotions, feelings, or thoughts when they are in a situation or doing something important to them, especially regarding their health (p. 374). As a mother, I knew what my children's emotions meant. I could tell how they were feeling by how they talked to me and how I talked to them. At birth, a baby's primary facial expression is one of joy. Because of this, it's essential for parents and other caregivers to know a lot about how newborns feel and to be patient and humorous. Regulation is about noticing and changing how

you react to things inside and outside of yourself. An individual must be conscious of their emotions to be able to control them. Since babies can't control their feelings, their primary caretaker needs to be a role model by giving them the care that keeps their emotions in check. Children reflect the feelings and social norms of those who care for them. Emotional regulation is an integral part of a person's life because it lets them control their emotions and have a manageable range of feelings. Emotions have a significant role in a child's development, particularly in the first few years of life. A baby's emotions, like happiness, sadness, interest, and fear, are essential to life. Infants' emotions also impact their interactions with others in the early years (p. 374).

7. Fathers' and Mothers' Ability To Care For Infants

A profound emotional relationship forms between parents and their infants. Parents desire to care for and safeguard their infant because of their love and affection for the child. Because of this, parents often must get up in the middle of the night to feed their hungry babies and listen to the diversity of noises they make as they sleep. There is no question that a child's growth during the first few years of life is essential for the rest of their life. How newborns and toddlers are treated can impact how they act and interact with others. A child can develop a strong attachment to their caregiver as early as nine months of age. Attention, approval, and acknowledgment—must be followed by caregivers. It is crucial for a child's development that their requirements are met. Receptivity and constructive intentionality can have a significant impact on children's development. Young infants can develop their identity and self-perception through interactions with others. Fostering secure relationships between caregivers and their children will lead to responses to children that promote a welcoming and positive

environment. According to the definition of a "secure attachment," it is a relationship between an infant and their primary caregiver in which the infant feels safe and responds warmly to the caregiver.

Responsive parenting for infants and toddlers can aid in developing positive relationships with others. It has been demonstrated that supportive caring and healthy attachments promote socioemotional well-being. Do mothers and fathers have different responsibilities when it comes to providing care? Yes, in some respects. A mother typically spends more time with her child than a father. Mothers and their kids are more actively involved with one another. They are accountable for coordinating and performing their duties as healthcare providers. Men make up 24% of parents who stay home with their kids. Some dads felt excluded when they accompanied their children to the playground. In addition, mothers play with their kids three times as much as males do. Some children respond more to dad because fathers enjoy tickling, bouncing, and throwing the baby up.

In comparison, mother-performed plays are less exciting because they focus on more symbolic and soothing things for the child/children. Bonding between a baby and its parents typically happens quickly. As for me, I experienced conflicted feelings about my first child. Despite loving her, she was so tiny that I was scared to hold her. I developed a strong attachment to my baby in the days after she was born.

Morelli's Strange Situation Task

Children form stable attachments when they trust their caretakers to be there for them. The youngster is aware that a trustworthy caregiver is accessible and attentive. The caregiver develops into a safe base as the child grows older and more independent. Securely bonded

children can freely play, explore, and interact with others when their caretakers are around. Around seven months old, a baby starts developing an attachment to its caregiver. Secure children perform well on the Strange Situation Test and welcome their caretakers back when they leave. The infants feel safe enough to venture out independently, even if they don't know where their parents will be if needed. These kids recognize their caregivers but don't actually go to them for solace. Their actions are performed with assurance. Insecure babies, on the other hand, look for their caretakers when they get home to try to reconnect with them. The caregiver mainly glances at the door to encourage them to come back.

The test's researchers were interested in the child's actions in a Strange Situation, how the child explored the room, and how the child reacted when the mother came back. The mothers of these children are responsive. When their moms are there, babies who remain bonded to their mothers freely explore the space and act amiably with strangers. Some infants may become unhappy and restrained when their moms leave the room, exploring less and avoiding strangers when they see them. However, they swiftly recovered after being reunited with their mothers. The crying child will come up to her mother and hug her. Being held reassures them, allowing them to resume their autonomous explorations of the environment quickly. Children who have strong bonds with others understand that they can rely on their caregivers in stressful situations because they know they can depend on others.

Reference

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