

Biological factors behind child development

Biological factors are a main influence in early development for young children (Haddad, 2020). These biological factors can affect young children in a positive and negative way. Haddad (2020) also adds that these factors play a significant part in the development of young children, especially during early childhood and the prenatal period. Biological factors involve the development of motor skills, prenatal development, brain development, genetic influences and nutrition.

The development of motor skills is a key stage during childhood development. Crowley (2014, p.86) explains how motor skills develop rapidly in early childhood, from limited motor skills developing from birth to the capability to independently walk by twelve months old. Crowley (2014, p.86) adds that motor development is based on the advancement of gross and fine motor skills. Gross motor skills refer to skills that require the whole body to move, using the larger muscles to help complete everyday functions such as walking, jumping and running. Whereas fine motor skills involve the ability to use the smaller muscles of the hands, to be able to use a pencil, scissors, to place Lego blocks together and opening lunch boxes (Kid Sense, no date). Motor development is important during early childhood as it allows children to develop physically and cognitively by assisting in hand-eye coordination, confidence, balance and allowing children to have self-awareness of their own abilities (Baby Day, no date). Additionally, some children may experience delays with the development of their motor skills. These delays could be caused by health issues such as cerebral palsy, speech implications and environmental factors (Circlecare4kids, 2023).

Prenatal development involves three key stages including germinal, embryonic and fetal development. The germinal stage occurs at zero to two weeks of pregnancy, the embryonic stage occurs at three to eight weeks of pregnancy and fetal development occurs at nine weeks pregnant up until birth (Cherry, 2023). Prenatal development is significantly important during early childhood, healthy prenatal development is key for babies to develop healthy and functioning brains. There are many factors which contribute to a decrease in development during the prenatal period, these include drug use, age of mother, alcohol, maternal nutrition, infections and poverty. Prenatal stress can cause many issues within the foetus and once the child is born, if the mother is anxious or depressed during pregnancy this can increase a wide range of adverse outcomes including emotional problems. These problems may include symptoms of ADHD or impaired cognitive development (Glover, 2015).

Brain development is prominent during early childhood, Crowley (2014, p.89) breaks down how during birth the brain is near to being adult size and grows rapidly throughout childhood. Additionally, Crowley (2014, p.91) adds that neurons are a basic unit to transfer information in the brain and that the production of neurons is complete by the end of the second trimester. During childhood, distinct types of neurons become associated with serving different purposes within the brain. These can be described as different brain systems which regulate different body functions and action our five senses which become habitual incredibly early on in childhood (UK Trauma Council, no date). Brain development is important during early childhood, as it has a lasting impact on the ability of the child during school and life and how well they succeed. Thus meaning, the quality of a child's life in the first few years, whether that be negative or positive, will assist the way their brain forms (First Things First, no date).

Another contributing biological factor is genetic influences. Starting from when children are conceived, the way they behave, and act is partly due to the genes they inherit (Ronald, 2018). However, not all genes are transferable such as behavioural and personality traits. The nature vs nurture debate plays a significant role within childhood development, nature refers to our genetics and includes the genes that we are born with and hereditary factors that can influence our personality which develop from early childhood throughout adulthood (Cherry, 2022). Whereas nurture refers to the environmental factors that influence who we are, this involves the way we are raised, social relationships, and the surrounding environment (Cherry, 2022). One theorist, Albert Bandura (1977) supports the argument for nurture with their famous social learning theory and well-known bobo doll experiment, which states that people learn through observation, imitation, and modelling behaviour. Contrastingly, another theorist, Freud (1856-1939) supports the reasoning behind the nature debate. Freud presented the psychoanalytic theory which explains that human behaviour is controlled by unconscious memories, thoughts and urges (Cherry, 2022). Freud (1856-1939) argued that children have biological motivation and innate drives that fuel this behaviour (Bee & Boyd, 2019, p.37-p.39).

Good nutrition is crucial during early childhood, as it is a time of constant growth, activity and development for young children (Public Health Agency, 2018, p.6). This is a pivotal time for healthy tooth development and avoidance of decay. Poor nutrition established in the early years can lead to an elevated risk of obesity, hypertension, diabetes and coronary heart disease (Public Health Agency, 2018, p.6). Children with poor eating habits may not receive the correct nutrients and vitamins that their bodies require, which may result in a lack of growth and development (HealthLink BC, 2023). Poorly nourished children tend to have weaker immune systems which make them vulnerable to long-term illnesses, including bone thinning and breathing difficulties such as asthma (HealthLink BC, 2023). Overweight children are at risk of developing liver issues, gallstones, early puberty, hip development issues and growth in legs (HealthLink BC, 2023).

To summarise all points that have been presented, there are many biological factors that contribute to early childhood development. Each factor explored all play a vital role with the growth and development of young children. Additionally, healthy development during early years means that children of all abilities involving those with health care needs, can grow up while their emotional, social and educational needs are met (CDC, 2023).

