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Review Article

Human Development, the Impact of Disability (Autism) on Child Development

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Abstract

Developmental disabilities (DDs) refer to a group of conditions that influence the early development of children. These disorders cause changes in their normal developmental pattern thus affecting their physical, language and mental abilities or behavior. Children with DDs do not develop normally as their typically developing counterparts. This special group of children especially those having autism usually lag behind their peers as a result they are seen as slow and being unable to learn and achieve to their maximum potential. Understanding how this special group of children grow and develop through the various stages of development might provide guidelines on how to meet their needs and enhance their development. This might facilitate their transition to adolescence and adulthood and then their eventual independence.

***Keywords**: Developmental Disabilities; Children with Autism; Stages of Development; Theories of Development; Impact*

Introduction

Development and disability are expressions commonly utilize together to explain the modifications and difficulties that frequently happen from childhood to adulthood as the child grows and develops. Human development is a systematic and highly complex process during which growth and transformation take place from birth to old age and death. During this process the child changes in shape and in tissue composition and distribution where different tissues and different regions of the body grow up at different rates. According to Lotrecchiano, Roizen, and Batshaw [1] development refers to modifications in human thinking, behavior and function. Everyone develops continuously but in a distinct way leading to different outcomes. Normal development in children presents a general picture of advancement compared to same-age peers [2,3].

On the other hand, the International Classification of Functioning, Disability and Health: Children and Youth Version (ICF-CY) views disability as an interaction between health conditions, individual and environmental factors. A disability can be a deficit in the way body functions or its structure, such as a cataract which affects vision, a limitation in activity, such as the inability to read or move around and be involved in social activities, such as exclusion from school. Disability is the delay in the ability to perform some actions, or take part in some real-life situation or setting [1]. This paper critically examines theories of human development with focus on the development of children with disabilities especially those with developmental disabilities (autism), their lifespan and family life cycle. Specifically it sought:

1. To explore the stages of child development especially children with developmental disabilities.
2. To critically examine the impact of disability with respect to development, lifespan, and the family life cycle.

The subsequent sections and sub-sections critically examine each of the objectives.

The stages of child development

In the past, little or no attention was given to the changes that occur in the areas of language, cognitive and physical growth of children during the stages of child development [4]. However, in the early 20th century researchers started studying child development focusing on abnormal behavior and later on had interest in typical child development [4]. This was in order to provide answers to the many questions asked regarding child development. This section examines the stages of child development as described by various theories of human development focusing on the development of children with developmental disabilities. The intention is to bring to the lime light the various manifestations that occur during the development of children with developmental disabilities, particularly autism. This will give an in depth understanding of the kind of therapy and support needed during each stage of development which if provided will enhance normal development.

Theories of human development

Human development theories clarify the changes that take place in children as they grow and develop. In other words, theories of development are an organized set of thoughts that enable us to understand human growth, behavior, learning and development [5,6]. These theories focus on various aspects of child development such as social, emotional and cognitive growth making it a vast and important human development process [4]. Everyone has his/her personal experience with development, but it is not always easy to comprehend why children behave in certain ways and what factors influence child development [5,7]. To provide answers to these questions as well as to understand and explain the various aspects of human development and predict behaviors that occur throughout lifespan for both typical and atypical children, the different theoretical perspectives of human development are examined.

Theories of human development include psychoanalytic, Erikson's psychosocial, cognitive development theories, maturational, behaviorism, social learning, and ecological system theories among others [8]. The above-mentioned theories are among some of the most pertinent in the field. For the purpose of this paper, the subsequent sections highlight two major theories of child development that is Piaget's cognitive developmental and maturational theories. These theories have been selected because they have exploited the stages of child development in great details. Emphasis is on the development of children with disabilities, especially those with developmental disabilities. Comprehending child development in general especially those with disabilities is essential because it allows one to fully appreciate the cognitive, emotional, physical, social, and educational growth that children go through from birth through early adulthood [7]. Also, it aids in identifying atypical development, guides practice decisions and the programming of interventions.

Piaget's cognitive developmental theory (1896-1980)

Jean Piaget, a Swiss cognitive theorist was a prominent psychologist and scientist of his time; one of the most significant figures in the study of child development. His theory was first presented in the mid-20th century and is one of the most famous and widely-accepted theories in child cognitive development. According to Piaget's cognitive-developmental theory children vigorously create knowledge as they investigate and maneuver their world. His view regarding child development set the base for several other theories. He stipulates that children usually think differently from adults [4]; he was interested in the development of "thinking" and how this occurs throughout child development.

Piaget's theory basically divided child's development into four distinct stages [9], which are characterized by differences in thought processing as children grow and their brains develop. Piaget in his study carefully observed children as they solve problems related to object permanence, reversibility, deductive reasoning, transitivity and assimilation [4]. According to Piaget assimilation takes place in the early days of life and occurs when new objects, people and events are treated as if they were familiar. That is, a new thought is absorbed to

already-existing schemes of thought [8]. For instance, a baby puts in his or her mouth anything he/she grabs because of the well-known activity of sucking. Accommodation happens when children modify or change their schemas, or ways of behaving and thinking, in order to adjust to a new situation. For example the way an infant will handle a larger ball differs from the way he/she use to handle a small one. He or she may need to place his/her fingers differently in order to hold it firmly. In the same way when children meet strangers they modify their ways of thinking and behaving in order to understand and interact appropriately with the new individuals. It is worth mentioning that assimilation and accommodation always occur together during infancy and are active as children constantly strive to adapt to the new world throughout life. Hence, the processes of assimilation and accommodation are referred to as functional invariants because they do not change during development [4].

However, changes do occur in the cognitive structures (schemas) which enable children to understand the world at progressively higher levels. Piaget maintains that there are different levels of cognitive understanding that is, children move from the activity-based sensorimotor functioning in infancy to the abstract levels of thought found in adolescence [8]. As children move through four broad stages of development each stage builds upon knowledge learned in the previous stage and is characterized by qualitatively different ways of thinking. Presented below are the four stages of Piaget's Cognitive Developmental Theory.

Stages of cognitive development

Sensorimotor stage of infancy

The sensorimotor period is the first stage which refers to the period between birth and two years of age and represent the most remarkable and spectacular stage of development. During this stage there is the development of thought in action as the infant exploits his/her environment using all five senses that is, seeing, hearing, touching, tasting, and smelling [4]. The child then moves from a dependent newborn to a toddler with a mind of his own. Children now understand that they can solve problems by performing certain actions [8]. For example, pushing an object to make it move or pressing a button on a toy to listen to a voice or a song, throwing an object and watch it fall and pulling cloth on a table or climbing on a chair to get a toy. Also, between five and eight months old, the child develops object permanence whereby they learn that even though their caregivers or favorite toys may be out of sight they continue to exist [4,9]. For instance, a child understands that even if his/her mother goes away, she still exists and similarly, a toy does not cease to exist because it was taken away from his/her presence.

As the infant grows in to a toddler his/her language develops. Furthermore, *by* the end of this phase of development children engage in deferred imitation. According to Piaget deferred imitation is the ability to imitate or repeat an action that was witnessed in the past [9]. The child at this stage does not only reproduce the observed action immediately, but he/she is able to produce a mental representation of it and imitate the behavior afterwards. Therefore, it is worth noting that by the age of one year infants can imitate activities/behaviors they witnessed about three months ago.

Preoperational stage of childhood

The second stage is the preoperational stage which takes place from the age of two to seven years. At the beginning of this stage children can solve a number of practical and actual problems by smartly using means-ends problem-solving, tools, requesting objects, pointing and asking for things to happen among other means. During this stage children engage in pretend play; they use symbols to represent words, images, and ideas. Hence, they can communicate well and represent information and ideas by means of symbols through drawing, symbolic play, gesture, and speech in particular [10]. For instance, a child might use his arms to form an airplane's wings and fly around, or he might use a stick and rubber to make a gun and play the role of a hunter or a policeman.

Therefore, language development and make-believe play begin during this stage. These abilities continue to develop significantly during this period [9]; however, there are some remarkable limitations to the child's ability to think. This is because rational thinking is

not yet present hence; children cannot understand more complex ideas, and at times appear quite magical and will believe in the existence of Santa Claus since at this stage children lack logical framework for thought. Again, children at this stage are very self-centered; they tend to focus on themselves and how actions will affect them, and not others [4]. They often think that everyone sees, feels and thinks just like they do and they display animism in their thinking by attributing life and lifelike qualities to non-living objects, especially those that move and are active, such as the wind and the clouds, and sometimes trees and other objects.

Concrete operational stage

The concrete operational stage refers to the period from seven to age 11 years old and is characterized by the idea that children's reasoning becomes focused and logical. During this phase of development children demonstrate a reasonable understanding of conservation principles that is; they develop the capacity to know that key properties of a substance remain the same even when their physical appearance is modified [4]. For example, a child who understands the principles of conservation will recognize the fact that the same number of cookies arranged in different manner remains unchanged despite the difference in the surface area they are made to occupy. Batshaw, Roizen and Pellegrino [8] stipulate that during this stage most children are able to identify quantities.

In addition, during this period the child starts to classify objects into different categories and can understand mathematical operations and transformations. However, the child still thinks in very linear ways and can only conceptualize ideas that can be observed directly [4]. By the end of this stage, children develop true mental operations and master the concepts of reversibility, transitivity, and assimilation. Reversibility means that something can be changed back to its original state after it has been altered. Transitivity is the understanding that different objects can be connected to each other through a relationship, for example, if A is related to B and B is related to C, then A must also be related to C. Assimilation is the taking in of new ideas, information, or experiences into a person's existing cognitive structure, or what they already know or understand of their world. Above all, the child develops the ability to see things from other people's point of view and also develops empathy [9]. Finally, Piaget maintained that in this stage, children can draw inferences from observations in order to make a generalization. On the other hand, children are unable to use generalized principles in order to predict the outcome of an event.

Formal operational stage

The formal operational stage takes place between 11 years and adulthood during which children build up their ability to think in abstract ways and are able to provide solutions to a variety of problems [9]. The adolescent now begins to reason like scientists; they manipulate variables to discover how things happen and are launched in to the realm of possibilities [4]. Also, they are able to combine various ideas to create new ones and by the end of this stage, children have developed logical and systematic thinking. It is worth noting that the ages mentioned above for the different periods of development are only approximations and no two children are the same hence, development is usually slower or quicker for different children.

Despite the fact that Piaget's theory of cognitive-development has some drawbacks [4,9], it helps us to understand that children develop the ability to think as they interact with the world around them. Also, from his theory we understand that infants and young children comprehend the world much differently than adults do, and as they play and explore their environment they learn how to think in ways that better fit with reality.

Maturational theories

Arnold Gesell was one of the first psychologists to emphasize the maturational aspects of child development [1]. He maintained that motor development progresses from general to specific in two directions; that is the cephalocaudal and proximodistal. The cephalocaudal trend means development is from head to foot along the length of the body. That is the child is able to control the head first, then the arms and trunk, and finally the legs. On the other hand, the proximodistal trend holds that motor control is from the center of the body

outwards to more peripheral segments. That is, the child is able to control the head, trunk, and pelvic girdle before the elbow, wrist, knee, and ankle joints, which in turn lead to the child's ability to control the hands and fingers.

According to Shaffer and Kipp [11] recognizing specific sequences of development and measurable milestones lay the foundation for subsequent screening and assessment. Some critics of this theory stipulate that the fact that motor skills develop in a regular sequence does not prove a genetic cause since skills such as playing a football, typing and driving among others can be learnt. Also, the maturational theory does not consider the individual differences in achieving the different motor skills [12]. Because of the short comings of motivational theory, the view of the dynamic systems theory of motor development is presented below to compliment the motivational theory.

Dynamic systems theory

The Dynamic Systems Theory holds that a dynamic and constant interaction of the nervous system development, capabilities and biomechanics of the body, and environmental constraints and support take place during development leading to all new motor development. That is behavioral change and development result from complex systems interactions of the individual and the environment [8].

It is worth noting that children develop motor skills in different ways and at different times. For instance, some children stand and walk without crawling while some will drag on their bellies before crawling on hands and knees and still others will crawl with their bellies and stand and walk [13]. In addition, studies have shown that at the beginning children learn these skills through trial and error with great concentration and gradually master them. These skills then form the basis for the development of new motor skills. For example, a child walks then begins to run. Looking at the description of human development above it can be seen that the development of children with disabilities is not considered. The following paragraphs present the development of children with disabilities.

How do children with disabilities fit in to the theories of human development?

This section critically examines the development of children with developmental disabilities, particularly autism. It starts by looking at disability and development and then critically examines the development of children with developmental disabilities particularly autism.

Disability and development

It is worth mentioning that little is known about the development of children with developmental disabilities when compared to the development of the so called normal children. It can be seen from the theories discussed above that little or nothing is said about how disability might affect the stages of child development. However, it is worth noting that children with disabilities do not go through the stages of development as so called normal children would do; changes in cognition, emotion, and specific abilities do not follow the typical pattern [8]. They may either lag behind significantly in acquiring certain skills or display unusual behaviors.

The subsequent sections present the difference between atypical and typical developments. Also, Piaget's and Vygotsky's views regarding children with developmental disabilities are discussed. It is worth stating that understanding the development of children with developmental disabilities will bring to the lime light treatment approaches that can promote "normal" development for this special population of children.

The difference between typical and atypical development in children

According to Batshaw, Roizen and Pellegrino [8] the term typical is used to represent the idea of normal, usual, expected, or average behavior while atypical suggests an unusual, unexpected, or significantly different from average behavior. Children with disabilities

develop at a significantly slower rate when compared to children of their age (delayed development). For children with developmental disabilities like autism, the different areas (e.g., cognitive abilities, language and speech skills, social-emotional skills, and play skills) among others may not follow the typical pattern and sequence of development [..]. That is, changes in the child may occur at different rates, on different timelines, and in different orders. According to Batshaw, Roizen and Pellegrino [8] if a child's development is more delayed in some areas than in others it is known as a dissociated pattern of delay. On the other hand, if delay in development is significant in all domains is called global developmental delay.

Consequently, it may be difficult to foretell how children with autism would attain developmental milestones and reach their optimal potential. However, this may become obvious with time based on the child's previous rates and breadth of performance. It is worth mentioning that apart from displaying typical milestones at later than the expected age other children can digress from typical patterns of development, whereby a child would demonstrate usual skills or behaviors that are not common in most children at any point during their development [14]. For example, children with autism exhibit different deviating behaviors such as echolalia or unusual, repetitive body movements, such as rocking. Thus, depending on the type of the developmental problem, children will demonstrate different levels of delay and deviance in behavior.

Piaget's and Vygotsky's views on disability

According to Piaget many individuals with autism between birth and age two years have difficulties attaining most of the developmental milestones which set the pace for normal development in future. The child is unable to explore his/her environment, develop skills and operate like a typical would do. Therefore, the child does not create a foundation upon which higher-level conceptual, symbolic, and social skills will develop subsequently. Since the successful development of complex skills in subsequent stages builds on existing cognitive structures [8]. Hence, Piaget holds that most children with developmental disabilities particularly autism manifest difficulties at the sensorimotor area of functioning.

Literature reveals that autism is as a result of a dysfunction in cognitive-development which could either be a basic defect in sensorimotor integration an inability to relate present to past experience, a persistent language disorder, a deficit in using symbols, and being unable to understand social and emotional cues [15].

On his part Lev Vygotsky, the Russian educational psychologist and semioticist describes disability as a developmental process and not a static condition resulting from related deficits during development. He maintains that disability is a social abnormality resulting from children's changing social environmental relations which leads to disturbances in social behavior. Vygotsky opines that the psychological composition of a child with disability is not as a result of the physical defects themselves, but is due to the social consequences caused by the defects. According to Vygotsky, children with disabilities are likely to have a particular need for modified or special educational environments. His theory has made an impact on educational training and practices in both special and general Education [8].

Summarily, human development is a complex process of growth and change which results in the acquisition of a variety of skills and abilities allowing children to better comprehend and function properly in every sphere of their lives [16]. It should be noted that developmental milestones are used as a guide to monitor each child's progress throughout the developmental stages. These help to identify any unusual behaviors during development. Typical development in children paints a standard picture of progress compared to same-age peers while atypical development occurs when a child either lags behind or manifests unusual behaviors in terms of physical, cognitive, social or in adaptive life skills. Children with disabilities go through atypical development.

Disability, development, lifespan, and family life cycle

As mentioned earlier development is a systematic and continuous change that takes place in an individual from conception to death [17]. It is worth stating that development is unique for each child as they develop continually in their own way and at their own rate

leading to different outcomes. Disability refers to a constraint or loss of ability (due to a defect) to carry out a task as expected by or required of an individual of that developmental stage. This section examines the impact of disability on development, lifespan and family life cycle.

The impact of disability on child development

It is worth stating that for children to develop normally and acquire skills as expected they have to actively participate in the process of development by interacting with their environment [18]. For children with disability this may not be possible owing to the restrictions they experience due to their disability. The following paragraphs present the various ways by which disability affects children's development.

Skills development

During development skills appear in children in a related manner that is sensory-motor, cognitive, communication and social-emotional [19]. Development in each of these areas occurs through the manifestations of a series of milestones which usually involves mastering simple skills before more complex skills are learned. It was found in a study that for children with disabilities, after an initial increase in skills between childhood and adolescence; some skills continue to increase, few deteriorate while others remain fairly stable [20]. However, abnormal behavior remained unchanged, and there was no improvement in social deficits in the absence of intensive intervention.

Therefore, disability can influence how a child plays, the types of play the child can take part in, and the child's capability to use play as an opportunity to learn and generalize new skills or concepts. Thus, children with disabilities play differently and use play in unusual ways. For children with disabilities to be able to use play as a learning opportunity they may need to be taught specific play skills [8]. For instance, the child may need to be taught how to get to materials or how to ask another child to play.

Also, children with physical disabilities may have problems moving to the areas available for play. Again, they may have difficulty to work with materials in a positive or meaningful manner. Additionally, speech might be restricted by certain developmental disabilities, such as autism and cerebral palsy. Furthermore, deficits in cognitive functioning may also delay the development of play skills. These children may require numerous occasions to copy and learn particular play skills before they can put skills to work in the more generalized nature of play [21]. Some may not find it easy to get involve in high levels of socio-dramatic play due to the inability to think abstractly. It should be noted that children with cognitive delays may also engage in more exploratory behaviors than in direct play behaviors.

Children with developmental disabilities, such as autism who have deficits in speech and language may manifest difficulties commencing or joining others in play and participate in it appropriately and adequately as expected for age [22]. Also, the child may not be understood by others involved in the play due to limitation in the use of speech and gestures. This causes frustration and the child will in turn dislike or shy away from any play activity. Overall, children with impairment in communication experience difficulties in describing, extending, or controlling play with others since language is closely related to cognition.

Concerning children with sensory disabilities such as visual or hearing impairments they may display deficits in a variety of play activities [23]. For the child with visual impairment orientation to play areas and materials can be a major problem including lack of exploratory or imitative skills. For instance, such an individual may not understand the use of materials or objects because of little or no experience in observing models or in manipulating objects. On the other hand, the hearing impaired child may lack language and speech skills as a result may not be able to respond appropriately to initiations during play by others.

Talking about children with social, emotional and behavioral disabilities their behavior usually hampers their involvement in play as well as the development of play skills [24]. These children may often stay away from others or play materials and activities leading to

restrictions from social play and manipulation of objects. Those who display aggressive behaviors may be avoided by other children for fear of misusing or destructing play materials as well as hurting others.

On the other hand, those who manifest repetitive or stereotypic use of play materials may have problems using play as a tool for generalizing skills. Still other children may find it hard to focus on certain play activities for a long period to allow for actual engagement to happen. Again some of these children may be excessively afraid of new things and may be reluctant to explore play materials with differing textures, size, or functions.

Regarding children with medical disabilities the severity of their health problems may obstruct the development of play skills or hinder the use of play to learn new skills [25]. For example, a child with a severe heart condition or asthma may not engage in motor play for a long time or may not get involved at all due to fatigue. This may lead to the lack of ability to start social play interaction with other children.

It can be seen that most disabilities can have an effect on more than one area of development [26]. Therefore, vigilantly observing the interactions of children with disabilities with objects and with other individuals will provide a better picture of how disability affects the development of children. This will in turn direct early interventions and implementation in order to provide opportunities for learning and generalizing new skills.

Influence of socioeconomic factors on the development of children with disabilities

It is worth stating that in addition to its influence on play skills and learning opportunities children with disabilities can suffer some developmental problems due to socio-economic factors, which have a significant effect on their survival and development [27]. These include poverty, stigma and discrimination and poor caregiver interaction among others. The manner in which these factors affect development is discussed below.

Poverty: Children with disabilities living below average standard are prone to having developmental delays compared to those from higher socio-economic backgrounds [19]. This is because their parents may not afford the necessary support materials to create an enabling environment for them to interact and develop the necessary skills expected during the stages of development [23].

Stigma and discrimination: Globally, children with disabilities suffer stigmatization and as such are excluded from most activities in their environments leading to marginalization within their families, schools and communities. As a result they may not have the opportunity to interact enough with their environment in order to acquire the skills expected during the stages of development. It should be noted that child-caregiver interaction, stimulating home environments and relationships are vital for nurturing the growth, learning and development of children, especially those with disabilities [19].

Institutionalization: Institutional environments are damaging to the development of children with disabilities. This is because many of them continue to experience developmental delay and irreversible psychological damage due to a lack of consistent caregiver input, inadequate environmental stimulation, lack of rehabilitation and poor nutrition [19].

Violence and abuse: Children with disabilities are most vulnerable during the first year of life as they are at risk of infectious diseases and other health conditions, as well as violence and abuse. Children with disabilities are more vulnerable to physical, sexual and psychological abuse and exploitation than non-disabled children. This is because most families reject them and they are abandoned on the streets. Exposure to violence and psychological abuse can lead to developmental delays and behavior problems in children as they grow and develop [29].

Limited access to programs and services: The availability of health care and education services is mandatory to the development of children with disabilities. When these children cannot access adequate health care, during their development they may not be able to acquire important developmental skills [30]. As this special group of children grow up, access to early childhood education and transition to the next level of schooling are also essential to establishing the foundation for continual learning and development [29,31]. Also, many if not all children with disabilities need to have access to additional learning opportunities and/or specialized services such as rehabilitation to maximize their development potential. If these are not available the development of children with disabilities will be greatly hampered and they may not meet their developmental requirements.

The impact of disability on lifespan

The long-term outlook for children with disabilities remains variable, depending on the nature of the problem. Some children will face a rapid physical decline and early death; others, such as those with cerebral palsy, will take their disability with them into adulthood. Generally, living with a disability is a difficult task; however, the outcome is different for each individual since this depends on the nature and extent of the disability [32]. Some children will go through fast physical decline and early death while others, such as those with cerebral palsy, may grow up with their disability into adulthood and then death. The needs of persons with disabilities are varied and may be changing throughout their lifespan. These include emotional, social, and financial needs which may have to do particularly with accommodations and modifications.

These are the different tools and supports employed to assist children with disabilities gain some degree of independence and bridge the gap [33]. But these tools may not always be readily available or accessible. Examples of these supports are wheelchairs, ramps or white canes used to assist children with physical disabilities and giving more time to an individual with mental disability to complete an examination. When persons with disabilities are made to feel or think that they should depend fully on others and cannot live their lives due to their limitations, they might become depressed [32].

Also, they may experience financial instability and social isolation as a result of their mental or physical limitations. For instance, if an individual in a wheelchair cannot afford to live in a home with ramps or stair lifts where him/her can make movements in and out of the house. Such a person can easily develop feelings of isolation and depression especially as feeling dependent on family and friends can produce strain or frustration in relationships [34].

According to Baird, Lucas and [35] the needs of persons with disabilities have either cognitive-evaluative or emotional-affective elements. Those with cognitive-evaluative elements are quite constant across adulthood, but reduce in old age and in close relation to mortality. These needs are usually measures of life contentment which mirror the evaluations of life situations for individuals with disabilities worldwide. Similarly, the needs with emotional-affective elements of well-being which include measures that broadly reflect the experience of daily emotions and similar to life satisfaction are fairly constant in adulthood and decreases in old age and in close relation to mortality.

However, there are some individual differences in well-being across adulthood because no two individuals with disabilities are the same in terms of body composition [36]. There are immense individual variations in how individuals respond to a disability [37]. Also, there are a variety of personal and environmental factors that influence the possibility of anyone with a disability maintaining higher levels of functioning.

Specific personal and environment factors that may affect levels of life satisfaction for those with disabilities are gender, education, severity of disability, and social participation. However, these may have less negative impact on women who may be more incorporated within their social network and have more social support [38]. Persons with a high level of education are able to better adapt and employ

approaches to overcome the negative effects of disability on their well-being. For example, with a certain level of education some persons with disabilities may gain employment or create one and be able to attend to material and financial obligations thereby promoting the sense of well-being despite their disability. Again, the extent of one's disability determines the extent of the impact [39]. That is, a less severe disability could have less effect on one's ability to live a fulfilling life leading to the maintenance of life satisfaction. On the other hand, a more severe disability could increase one's dependence on others for assistance resulting in declines in life satisfaction.

It is worth mentioning that developmental disabilities such as autism is a lifelong disorder and children with this condition go through significant life changes as they move through major phases of life [8]. Hence, they need the necessary support and interventions to enable them move from one stage of their lives to another with ease and some degree of satisfaction. Therefore, their quality of life depends not only on the foundation provided in childhood, but also on continuous accommodations and modifications that are unique to their educational, medical, social, recreational, family and employment needs [39]. The next section discusses the needs of children with developmental disabilities as they grow from childhood in to adulthood.

Meeting the needs of children with developmental disabilities as they grow up

Talking about meeting the needs of children with developmental disabilities as they moved from childhood through adolescence is mandatory. Organizations like The Autism Society assists parents and caregivers having children with autism build treatment and educational programs to enable all children and adolescents reach their optimal potential [39]. For example, the Individualized Education Plan which is developed and implemented through the school system with the collaboration of caregivers and other programs that help prepare them for transition to adulthood [23]. Also, The Autism Society makes available services and supports that maximize independence and secure the highest quality of life for adults with autism [39]. For instance, being employed and integrated in the society as well as self-advocacy are goals to be achieved by adults living with autism.

Hence, the extent of achievement for individuals with developmental disabilities as they transit into adulthood may depend on the type of disability [40] This is because the different types of developmental disabilities affect the lives of individuals differently. For instance, autism affects mostly speech and social interaction but the individual may be physically fit to carry out daily activities with some level of support. On the other hand, persons with Down syndrome may interact well with others but require some level of support in performing activities [41]. Also, the severity of the disability matters; an individual with a mild disability may function independently or with relatively little support while those with severe disabilities may be completely dependent.

Again, the amount and quality of therapy they received at the beginning of their diagnosis has a vital role to play [41]. A child who was given intensive and appropriate therapies early is likely to build skills and self-confidence increasing the likelihood that such an individual will grow up to become a less dependent adult. Furthermore, the personality of the individual with a disability may determine the outcome. Some persons may be determined to be as independent or successful as typical children while others may see their disabilities as a serious limitation to living an independent live. Finally, social network may be a hindrance or a booster to living a successful and independent life by persons with developmental disabilities. Those who live in communities where they are easily accepted and assisted are able to make it in life, while those who are rejected and isolated by their family and/or community remain dependent on others. According to Batshaw, Roizen and Pellegrino [8] young people with disabilities who are isolated are likely to struggle to reach a more independent adulthood and have poorer outcomes.

The impact of disability on family life cycle

The family life cycle refers to a chain of phases that a family may go through over time. Usually, these include the stages of a young adult who is single, a newly married adult, a family with young children, a family with adolescents, and a family in old age. Disability has been shown to have a remarkable impact on family interactions and functioning across the course of the family life cycle. Families of children

with disabilities go through life cycle stages, which may be extended, or shortened. Also, a child›s disability may cause a family to become fixed in a life cycle phase. Furthermore, families may also realize a change in the life cycle of their children with disabilities.

Literature shows that families having children with disabilities are more at risk of experiencing economic and social disadvantage than those without disability [30]. This is because disability can aggravate poverty at the household level as parents take time away from income-generating activities to care for a child with a disability. Meanwhile, they are expected to meet the additional costs associated with disability, for example buying assistive devices like a wheelchair and other audiovisual aids [42].

Also, in cultures where the birth of a child with a disability is associated with guilt and shame parents of children with disabilities are often discriminated against. As a consequence, they may shy away from social gatherings or even be avoided by relations and friends leading to low self-esteem and frustration. Similarly, in communities that hold negative attitudes and beliefs towards disability, parents may be relegated to the background. As a result they may experience poverty and lack the required economic and social support, and information needed to render adequate and appropriate care to their children [41]. Again, some children with disabilities have higher support needs due to the degree of their disorder hence, their total dependency on their parents, in addition to other social and economic barriers; can significantly make them go through stressful moments.

On the other hand, research findings in high-income countries opine that rates of divorce and abandonment among parents of children with disabilities may be significantly higher compared to the rates among parents of children without disabilities [41]. Furthermore, Siblings of children with disabilities may be indirectly affected as their parents devote almost all of their time and resources to meet the needs of their child with the disability.

Conclusion

Human development is a complex process of change and maturation from birth to death. Typical development in children can be used as a measure to compare the advancement of same-age children. The development of children with disabilities was not given enough considerations in the past. However, in the early 20th century some theorists began to study abnormal development which has led to the understanding of disability and the development of different interventions to breach the gap during the stages of development for children having disabilities. This is very important because the kind of experiences children have during the early stages of development determine their achievements as adults. Therefore, children who have disabilities are given extra attention to ensure access to interventions which can help them reach their full potential in their adult life.

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Volume 13 Issue 10 October 2024