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Seema Lasi

Aga Khan University, Human Development Programme, Pakistan

Sanober Nadeem

Aga Khan University, Human Development Programme, Pakistan

Irum Fatima

Aga Khan University, Human Development Programme, Pakistan

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Quality in Early Childhood Education: Assessing Early Child Development - A Holistic Approach for Ages 3-6 years

Seema Lasi, AKU-HDP, Pakistan
Sanober Nadeem, AKU-HDP, Pakistan
Irum Fatima, AKU-HDP, Pakistan

Abstract

Early childhood lays strong foundations for adulthood. Experiences, positive or negative, during this period have long-lasting effects. The purpose of this paper is to underscore the need for an integrated approach towards early years, particularly pre-school period (3 to 6 years). The article also introduces to 'Record of Early Childhood Growth and Development' developed by Human Development Programme of Aga Khan University to measure holistic child development.

Key Words: Holistic, Integrated, Child development, Assessment

Introduction

A Child's early years are critically important, for they provide the foundation for rest of the individual's life, both as an adolescent and as an adult (Young, 2000). It is a unique opportunity period for every individual where they undergo significant social, intellectual, emotional and physical development. Positive stimulation during this period not only promotes optimal development but will also enable the child to thrive and survive in adulthood. This knowledge is supported with increasing research and evidence from natural and social sciences, historical studies, genetics, epidemiology and neurosciences (Mustard, 2000).

Due to the recent discoveries from neurosciences, we are now beginning to understand the links between brain development and its effects on learning, behaviour and health throughout an individual's lifespan. There are sensitive periods when a young child requires positive stimulation for the brain to establish the neural pathways and with this also happens the elimination of those elements that are not being stimulated (McCain & Mustard, 1999). During the pre-school years the brain and nervous system grows rapidly and at six years it attains 90% of its adult size (Tanner, 1978).

An Enabling Environment

Brain Development is very much vulnerable to environmental influences (health, nutrition, sensory stimulation and care) and their effects are long-lasting (Carnegie, 1994). Essentially, most experts agree that every facet of a child's development is the result of some complex interaction between nature and nurture. The central processes of early childhood development (e.g. physical maturation, attachment, symbol use) are influenced by external factors.

The key elements of child development, physical, mental and social & emotional are not distinct, and cannot be compartmentalized in to health, nutrition, sensory stimulation and care. It is entirely an integrated approach and deficiency in any of these factors or its determinants could cause immeasurable disparities. Health, nutrition, stimulation and care interact for better growth and development as demonstrated by the flow diagram:

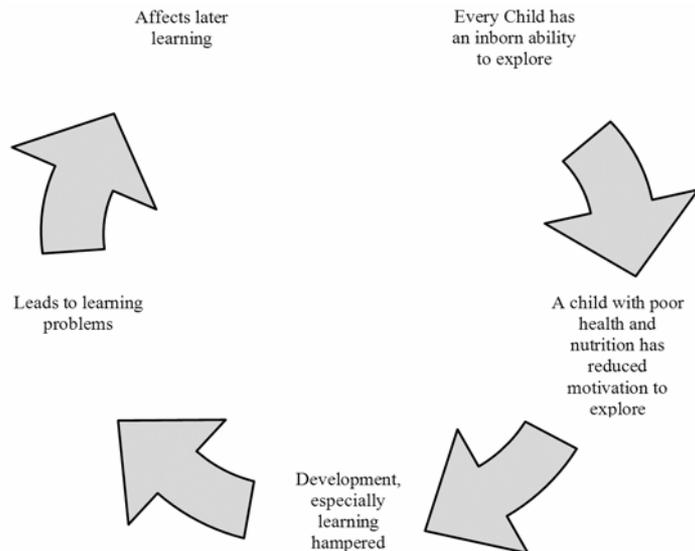


Figure 1: Model of Holistic Child Development. Source: Adapted from “Early Childhood Counts” (Evans, Myers & Ilfeld, 2000)

Every child is born with an ability to explore and the skill is mastered by praxis (practice of a skill). Those with poor health or / and nutrition have reduced motivation to explore. This hampers overall development, in this case learning, which further leads to learning problems at school and could later affect earning opportunities.

Approaches towards Early Years

'Early childhood' is generally defined as a period from birth to six years. Early Child Development (ECD) begins even before birth. 'Development' refers to the process in which child learns to master more and more complex levels of moving, thinking, feeling and interacting with people and objects in the environment (Evans, Myers & Ilfeld, 2000). ECD encapsulates all the facets of child development, including health, nutrition, sensory stimulation and interaction; which are prerequisite for optimal child development. Early Childhood Education (ECE), the word 'education' pertains to school education during pre-school years and concentrates more on the cognitive development, in other words, learning.

Learning, in general of course, is very crucial to development but cannot happen in isolation. It is defined as a process of acquiring knowledge, skills, habits, and values through experience, experimentation and observation (Myers, 1995). The age group 3-6 years is commonly referred to as Early Learning Period or Pre-school period. This is the time when the child enters school for formal learning. Along with cognitive development, socialization with peers and caregivers also broadens. ECE inculcates self-esteem and confidence, and this plays crucial role in mental development (Khan, 2004).

Both ECD and ECE are different but overlapping approaches. ECD espouses health, nutrition, birth registration, early stimulation, care and education; while ECE is more focused upon cognitive and psychosocial development only (UNICEF).

'Learning' and 'education' are embedded in care and development (Myers, 2001). When we talk about ECE, the outcomes are high school enrollments, school retentions, intellectual and academic achievements, low delinquency rates, better job opportunities. The fact is that these can only be achieved by a holistic approach, taking in to consideration health, nutrition, psychosocial stimulation and care. Holistic child development is imperative for mental, physical, social & emotional development. Although ECE recognizes as well that child development should be holistic in cultural context, ECE programs are more likely to be associated with education (Myers, 2001).

¹ Some schools of thought describe 'early years' as a period from conception or birth to eight years.

Keeping in view the need to assess and support holistic child development in communities, the Human Development Programme of Aga Khan University has developed *Record of Early Childhood Growth and Development* and *Suggestions to Caregivers* for 3-6 years old children. Research experiences in communities during 2002, determined a dire need to develop a culturally relevant instrument for measuring child development. A standard instrument or standardized outcome measure to assess child development does not exist so far. The majority of the instruments developed by the 'Minority world' do not reflect the true norms of our population, which makes it more difficult to choose and adapt these instruments to this part of the world.

The *Record* is intended to assess growth (height and weight) and physical, mental, social and emotional development of children of ages 3-6 years. Another important component of this *Record* is 'Suggestions to Caregivers' which are to be used to disseminate information to primary caregivers, usually mothers, about child nurture for better growth and development.

Methodology

Record for Early Childhood Growth and Development

The *Record for Early Childhood Growth and Development* is a follow-up child record to track the brain development of children, 3 to 6 years old, over time. The child record has 2 main sections. The first is the assessment section providing the opportunity to assess growth and development, which is followed by caregivers' suggestions, which are intended to sensitize caregivers' for importance of child nurture. The *Record* is intended to assess the association of physical growth and brain development with the child's nurturing environment. It is developed to observe growth and development over time and to gauge the age, where the acquisition of various functional abilities occurs.

Development is broadly divided in to 3 trajectories: Physical, Learning and Behavioural. These trajectories are tracked by means of four domains:

- Gross and fine motor
- Language

• Dr. Bilal Iqbal, Department of Community Health Sciences, The Aga Khan University Medical College, 2002; unpublished data.

- Cognition
- Social & emotional

For each domain, there is a sub-set of functional abilities, varying in number from 4 to 8, to indicate the development of the functions of brain networks, and also to reflect associations with the nature of the child’s social environment.

Table 1: Functional abilities considered in the *Record for Early Childhood Growth and Development* for each of the four domains of child development.

Domains	Functional Abilities
Motor Development	Catches a large ball Throws a ball towards a target Hops forward Catches a bounced tennis ball with both hands The child dresses himself completely Colour within lines Copy a triangle Ties a simple knot
Language Development	To associate a sound with its symbol Tells a story Writes his first name Names colours
Cognitive Development	Arranges objects by increasing size Repeats a pattern in sequence Recognizes patterns Counts in sequence Works out simple addition and subtraction mentally Reads the hours of a clock
Social & Emotional Development	Toilet habits Follow simple rules in a game Managing toileting needs Resorts to temper tantrums Child’s general emotional state

Salient Features of *Record of Early Childhood Growth and Development*

- Tried on about 1000 urban and rural children and modified accordingly
- Results of testing has shown that the Record can be effectively used to asses the age of acquisition of functional abilities
- Community based workers with at least Matric education (Secondary school), and a 3-weeks training on ECD can effectively use this Record.
- Functional abilities and suggestions are illustrated in order to help illiterate caregivers
- Available in 3 Languages (English, Urdu, Sindhi)
- The caregiver, for her information and record retains a copy of Child Record.
- The assessment section is accompanied by Suggestions to sensitize caregivers for better child nurture.
- The Record is actually being implemented in two rural communities of Sind and Baluchistan on more than 900, 3-6 years old children.

Developmental Trajectories

Physical Development

It includes physical growth as well as gross and fine motor development. Scientists believe that the sensitive period for gross motor development is at its maximum from birth to 5 years. During the pre-school period significant advances occur in motor control involving both the large muscles, such as those used in jumping, running and climbing; and the fine muscles used in writing, cutting and tying a knot.

The purpose of the functional abilities that we selected for this record is based on the child's:

1. Increasing ability to perceive body size, shape and position
2. Increasing body strength,

3. Increase in bilateral coordination between the right and left sides, and the upper and lower body parts, and
4. Increasing coordination between hands and eyes.

Again, physical development is largely determined by nutritional status, environmental stimulation, good health and appropriate care. The following graph will enhance further understanding:

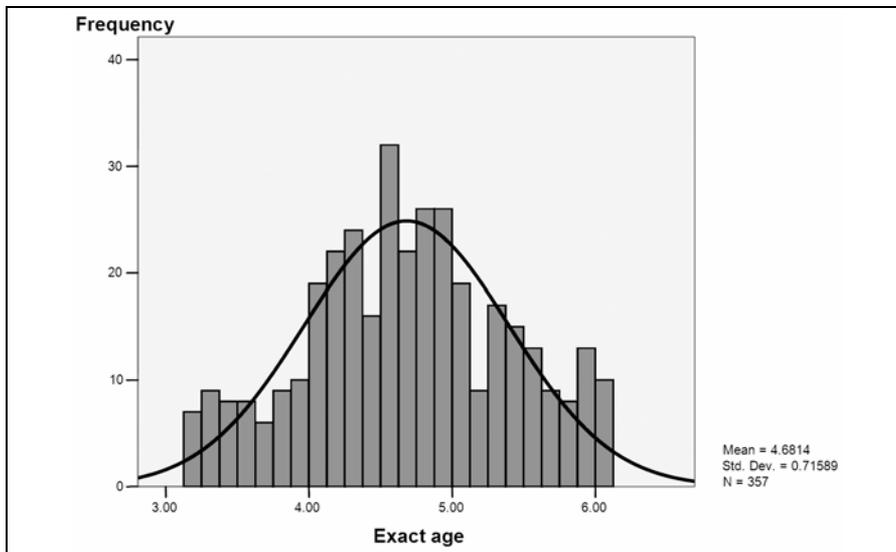


Figure 2: Kicks a large ball towards a target

This graph clearly demonstrates the age of acquisition for ‘Kicks a large ball towards a target’ is normally distributed. The mean age of acquisition is 4 years and 8 months and the standard deviation is \approx 8 months. The graph clearly demonstrates that there are children who are able to acquire this ability even before 4 years, probably due to better health, nutrition, stimulation & care. On the other hand, there is subsequent number of children who acquired this skill after they crossed 5 years. The reason could be malnourishment (Children malnourished for longer period of time are likely to have delayed motor development), lack of stimulus or opportunity to practice.

Following is an example to demonstrate an association between malnutrition and acquisition of a functional ability.



Figure 3: Catches a bounced tennis ball with both hands

The graph clearly demonstrates a normal distribution for the age of acquisition of 'Catches a bounced tennis ball with both hands' with mean of 5 years and 2 months and standard deviation ± 7 months. The minimum age of acquisition of this functional ability is 3 year -2 months; again a myriad of factors could be involved. Upon stratifying at various age levels, the effect of acquisition of the functional ability is significantly associated (at 0.25 level of significance) with malnutrition (underweight). This clearly emphasizes the role of nutrition on the acquisition of functional ability.

Learning (Language and Cognitive Development)

Language is an efficient way of communicating thoughts and feelings. It includes all the skills that will help the child, to read, write and to express their ideas. The sensitive period for acquiring language and language skills begins before 1 year, and peaks during pre-school years. All forms of language, that is, expressive and receptive (story telling), as well as written language (recognition of letters or sounds) is learnt and mastered during pre-school period.

For cognitive development, curiosity is the basic driving force leading to exploration, which provides sensory inputs and the opportunity to learn from sensory perception. Recognition and understanding the meaning of symbols are indicators of such learning. Also creativity involves imagination and is a prominent feature of normal child. Cognitive development includes memory, problem solving, and numerical understanding (Mikulencak, 1999). Cognitive

development spurts during the 2nd year of life (Thatcher, Walker & Guidice, 1987) and continues till puberty, but with some limitations (Doherty, 1999). Cognition and language development both happen in close coordination.

Behavioural Development

It comprises of social and emotional development. Emotional development includes the ability to identify and understand one's own feelings, to accurately read and comprehend emotional states in others, to manage strong emotions and their expression in a constructive manner, to regulate one's own behaviour, to develop empathy for others and to be able to sustain relationships (Denham, 1998). Social development involves the process of acquiring socially desirable characteristics, which are values and norms. The pre-school years are the peak sensitive periods for Social & Emotional development. The sensitive period for emotional development starts at birth and wanes at puberty (Begley, 1996); while peer social competence begins around 3 years and extends up to 6 or 7 years (Doherty 1997). Preschool period is the time when the child's social circle starts to expand and they spend significant amounts of time with their peers and teachers. They learn the rules of behaviour (socialization and expression of emotions) and self-help skills. For example voluntary control of bowel is a social act but mainly depends on reflex, brain functions and neuronal connections; controlled by higher cortical functions.

Conclusions

Child development is an integrated phenomenon and has massive influences of all sorts. The interrelation between positive stimulation during pre-school years and nutrition is very well demonstrated by the above mentioned results. Nonetheless, the associations with health and care can also be demonstrated. In terms of functional outcomes, experts agree this is likely to result in improved indicators of human development (such as improved school achievements, peer interactions).

Child centered, family focused, community based, holistic care and education during pre-school years is essential for securing the well being and rights of all children. The *Record for Early Childhood Growth and Development* attempts to integrate the different facets for optimal child development in the assessment procedure, and encourages a programme of communication with the primary caregiver to support child nurture.

There is a great deal of potential for further development of a quantitative instrument for school going children to assess holistic child development, with involvement and support from the education sector, especially preschool teachers and trainers, based on the modified version of *Record for Early Childhood Growth and Development* or other suitable instruments.

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Contact

seema.laasi@aku.edu