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# " ASSESSMENT OF GROWTH IN CHILDREN AGED 0–5 YEARS: A PROSPECTIVE OBSERVATIONAL STUDY AND ITS CLINICAL SIGNIFICANCE."

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**Abstract :** Developmental milestones are important indicators used to evaluate a child's progress from infancy through childhood. They provide a framework for determining whether a child is developing as expected for their age or experiencing delays in one or more developmental domains.

These domains include social and emotional skills, gross and fine motor abilities, language development, and cognitive functioning. Assessing developmental milestones is a key aspect of pediatric care and requires collaboration among healthcare professionals to ensure early identification and appropriate intervention for developmental concerns.

**Keywords:** Child growth, child developmental milestone, motor developments, early childhood development, developmental delay , language development.

**INTRODUCTION :** Developmental milestones are age-specific skills and behavior that children are expected to acquire as they grow and mature. These milestones are grouped into five key areas: gross motor, fine motor, language and communication, cognitive abilities, and social-emotional/ behavioural development. Knowledge of these milestones enables healthcare providers to identify developmental delays at an early stage, allowing timely intervention and better long-term outcomes.

Common Developmental Milestones[1]

6 Months-May show fear or hesitation around unfamiliar people (stranger anxiety),Rolls over independently. Produces consonant sounds while babbling. Frequently brings objects to the mouth for exploration.

9 Months-Demonstrates separation anxiety when caregivers leave. Can sit without support, crawl, and bear weight on hands and feet. Develops a pincer grasp using the thumb and index finger. Understands the word "no," points at objects, and may say simple sounds such as "mama" or "baba. "Enjoys interactive games like peek-a-boo.

12 Months-Assists with dressing by extending arms or legs. May become upset when familiar caregivers leave. Stands steadily without support. Responds to simple instructions and uses gestures to communicate. Places objects into containers, removes them, and bangs objects together.

18 Months-Engages in simple pretend play. Shows affection through hugs and kisses.Walks independently and can climb steps with assistance. Uses utensils while eating .Speaks several individual words and can identify one body part when asked. Scribbles with crayons, markers, or pens.

2 Years-Begins interacting with other children through parallel play. Can stand on tiptoes, kick a ball, and throw a ball overhand. Uses short phrases containing 2–4 words. Points to pictures in books and is understood about half the time by unfamiliar listeners. Builds towers of at least four blocks and follows two-step directions.

3 Years-Dresses and undresses with minimal help. Imitates others and starts taking turns during play. Walks up and down stairs using one foot per step and runs with ease. Speech is approximately 75% understandable to strangers. Stacks six or more blocks, turns book pages, and manipulates buttons and knobs.

4 Years-Enjoys cooperative and imaginative play with peers. Can hop on one foot and maintain balance on one foot

for a few seconds. Uses scissors with increasing control. Recites songs or poems and demonstrates an understanding of basic grammar. Recognizes some colors and numbers and draws simple human figures with 2–4 body parts.
5 Years-Understands the difference between fantasy and reality. Often wants to imitate friends and peers. Can balance on one foot for about 10 seconds and perform a somersault. Speaks clearly, tells stories, and uses future-tense language. Counts to ten, draws a person with approximately six body parts, and writes some letters and numbers.[(2)]

**Aim**: To assess growth patterns in children aged 0–5 years through repeated anthropometric measurements and evaluate the clinical significance of growth monitoring and developmental assessment.

**Objectives:**

To study the age and sex distribution of children.
To assess weight and height at each clinical visit.
To identify children classified as underweight.
To monitor changes in anthropometric measurements during follow-up.
To assess developmental milestones, if included in the study protocol.
To identify children who may benefit from nutritional counselling or further clinical evaluation.

**MATERIALS AND METHODS:**

**Study design:** Prospective observational study, if children were enrolled and followed forward in time.

**Study population:** Children aged 0–5 years**.**

**Sample size:** 100 children.

**Study population:**

The study included children from birth to five years of age attending pediatric outpatient clinics and well-child visits.children were assessed for age-appropriate growth parameters and developmental milestone attainment.

**Inclusion criteria:**

- Children aged 0-5 years.
- Children attending routine health check-ups or immunization visits.
- Parents or gurdians willing to provide developmental and medical history.

**Exclusion criteria:**

- Children with diagnosed genetics syndroms affecting growth and development.
- Children with severe neurological disorders or congenital anomalies.
- Children with incomplete medical or developmental records.

**Data collection:**

Information was collected through parental interviews,medical records,and direct clinical examation.A structured assessement form was used to record demographic details,birth history,nutritional status and developmental progress.

**Growth assessment:[4]**

Growth was evaluated using standard anthropometric measurments, including

- Weight
- Length/Height
- Age
- sex
- Head circumference

Measurments were compared with age and sex specific growth standards recommended by the world health organization (WHO) to determine normal growth patterns.

**Developmental assessment[5]**

Five developmental domains:

1.Gross motor development

2.Fine motor development

3.Language and communication

4.Cognitive development

5.Social -emotinal and behavioral development.

**Clinical significance**

Children with delays qualify for early intervention,a program that can help them catch up to development typical for their age. These intervations may include speech therapy, physical therapy and occupational therapy,the earlier delays are identified and addressed,the more positive the prognosis[6][7].children with cerebral palsy also present with global delays.A thorough workup should include hearing screening, thyroid function testing, and a microarray.[8][9]

**Ethical considerations**

The study was conducted in accordance with ethical principles for research involving children.informed consent was obtained from parents or legal guardians before participation.confidentially of all participant information was maintainec throughout the study.

**RESULTS**

**Table no 1- sex wise distribution**

| Sex | Number | Percentage |
|---|---|---|
| Male | 54 | 54% |
| Female | 46 | 46% |
| Total | 100 | 100% |

**Table no 2- Distribution according to reported growth status**

| Growth status | Number | Percentage |
|---|---|---|
| Normal weight and height | 85 | 85% |
| Underweight | 15 | 15% |
| Total | 100 | 100% |

**OBSERVATION:** Among the 100 children aged 0–5 years, 85 (85%) were reported to have normal weight and height, while 15 (15%) were classified as underweight

**DISCUSSION**

The study emphasizes the importance of repeated anthropometric assessment in early childhood. Measuring weight and height at every visit allows clinicians to monitor growth trends rather than relying on a single measurement. The identification of underweight children can support timely nutritional assessment and further clinical evaluation.

However, the proportion classified as underweight does not establish the cause of undernutrition. Additional information, including age-wise distribution, growth-chart measurements, feeding history, and follow-up changes, would strengthen the analysis.

Developmental milestones are a separate outcome. Unless you also assessed motor, language, cognitive, and social-emotional milestones, the results should not claim that developmental delay was identified or excluded.

**Conclusion**

In this study of 100 children aged 0–5 years, 54% were male and 46% were female. Of the total study population, 85% were reported to have normal weight and height, while 15% were classified as underweight. Repeated anthropometric measurements at every visit provide a useful basis for monitoring growth and identifying children who may require further evaluation.

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