Child health 2

Early childhood development[1,2]

Early childhood (from conception to age 8) is a critical phase of rapid brain and body development, shaping a child's learning, relationships, and future success.

During pregnancy and the first years of life, the brain forms over 1 million neural connections per second, influenced by health, nutrition, and environment.

Quality early childhood development (ECD) programs enhance learning outcomes, reduce school dropout rates, and lead to long-term social and economic benefits. The goal of ECD is to ensure all children, especially the most vulnerable, reach their full developmental potential.

Early childhood development

Key phases include:

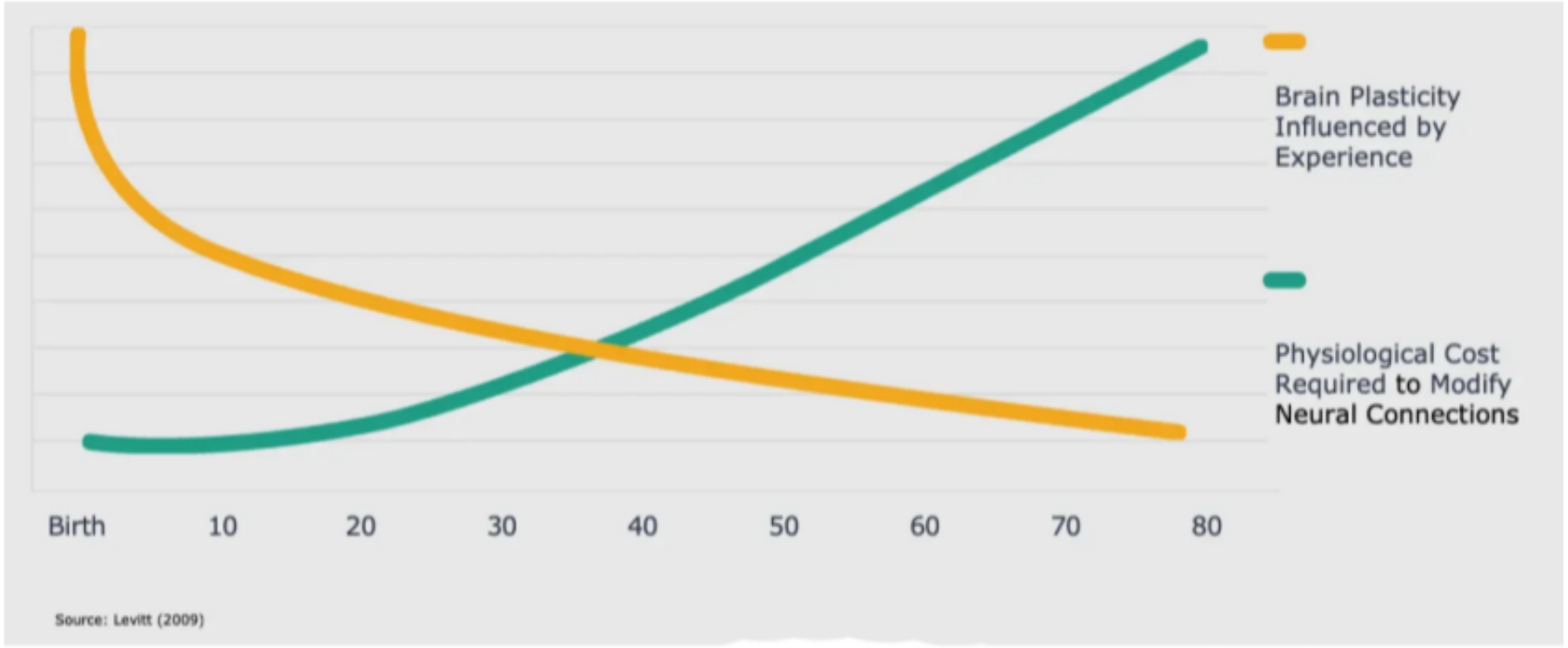
- Conception to birth – Foundation for brain development.
- Birth to age 2 – Emphasis on the first 1,000 days.
- Preschool (3–6 years) – Prepares children for school.
- While ages 6–8 are included, the focus remains on early years up to school entry. Proper support during these stages ensures better education, health, and future opportunities

Brain Development in Early Childhood

The brain develops sequentially, starting before birth and continuing into adulthood. Early neural connections form simple circuits, which later develop into more complex networks. In the first few years, the brain grows rapidly, then refines itself through pruning—eliminating unused connections to improve efficiency.

Key Factors in Brain Development:

- Genes and Experiences: Genes provide the blueprint, but repeated experiences strengthen neural pathways.
- Serve-and-Return Interactions: Responsive caregiving is crucial; without it, brain architecture suffers, affecting learning, behavior, and health.
- Environmental Influences: Factors like clean water, nutrition, and quality early education shape brain development alongside genetics.



The brain is more influenced by experience in a child's earliest years. The brain's ability to adapt —known as brain plasticity—declines as we age. *Adapted from a graph created by Pat Levitt in collaboration with the Center on the Developing Child at Harvard University (2009).*

https://developingchild.harvard.edu/key-concept/brain-architecture/

Brain Development in Early Childhood

Environmental Influences on Brain Development

- Positive environment strengthens brain development: nurturing relationships, safe, stimulating surroundings
- Negative environment disrupts brain wiring: toxic stress from neglect, violence, extreme poverty

Neuroscientific Evidence[1]

- Adversity and Brain Development: Poverty and malnutrition correlate with smaller hippocampal volume and impaired cognitive function. Maternal nurturing can buffer these effects.
- Intervention Timing: Early interventions (e.g., prenatal micronutrient supplementation) show long-term benefits, while delays reduce efficacy (e.g., iron supplementation after 12 months had no effect).

What is Nurturing care ?[1]

- It is defined as a stable environment that meets children's health, nutritional, safety, and emotional needs, with opportunities for early learning.
- To reach their full potential, children need the five inter-related and indivisible components of nurturing care: good health, adequate nutrition, safety and security, responsive caregiving and opportunities for learning.
- In the first years of life, parents, intimate family members and caregivers are the closest to the young child and thus the best providers of Nurturing Care.

GOOD HEALTH

Refers to the health and well-being of the children and their caregivers. Why both? We know that the physical and mental health of caregivers can affect their ability to care for the child.

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OPPORTUNITIES FOR EARLY LEARNING

Refers to any opportunity for the infant or child to interact with a person, place, or object in their environment. Recognizes that every interaction (positive or negative) or absence of an interaction is contributing to the child's brain development and laying the foundation for later learning.

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ADEQUATE NUTRITION

Refers to maternal and child nutrition. Why both? We know that the nutritional status of the mother during pregnancy affects her health and well-being and that of her unborn child. After birth, the mother's nutritional status affects her ability to provide adequate care to her young child.

Photo credit:
Nyani Quarmyne/Panos Pictures

SAFETY AND SECURITY

Refers to safe and secure environments for children and their families. Includes physical dangers, emotional stress, environmental risks (e.g., pollution), and access to food and water.

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RESPONSIVE CAREGIVING

Refers to the ability of the caregiver to notice, understand, and respond to their child's signals in a timely and appropriate manner. Considered the foundational component because responsive caregivers are better able to support the other four components.

Photo credit:
Aga Khan Development Network/J.L. Ray

Well-care visits

Well-care visits are scheduled, routine checkups for children and adolescents from birth to 19 years. Their primary purpose is to ensure healthy growth and development, guide parents, and support caregivers.

Well child visit objectives

1. Health Promotion – Educates families on nutrition, safety, and healthy behaviors.
2. Disease Prevention – Includes vaccinations, injury prevention, and mental health support.
3. Early Detection – Screens for developmental delays, disabilities, or health issues.
4. Anticipatory Guidance – Prepares families for upcoming developmental stages (e.g., school readiness, adolescence).

Evidence on Scheduling:

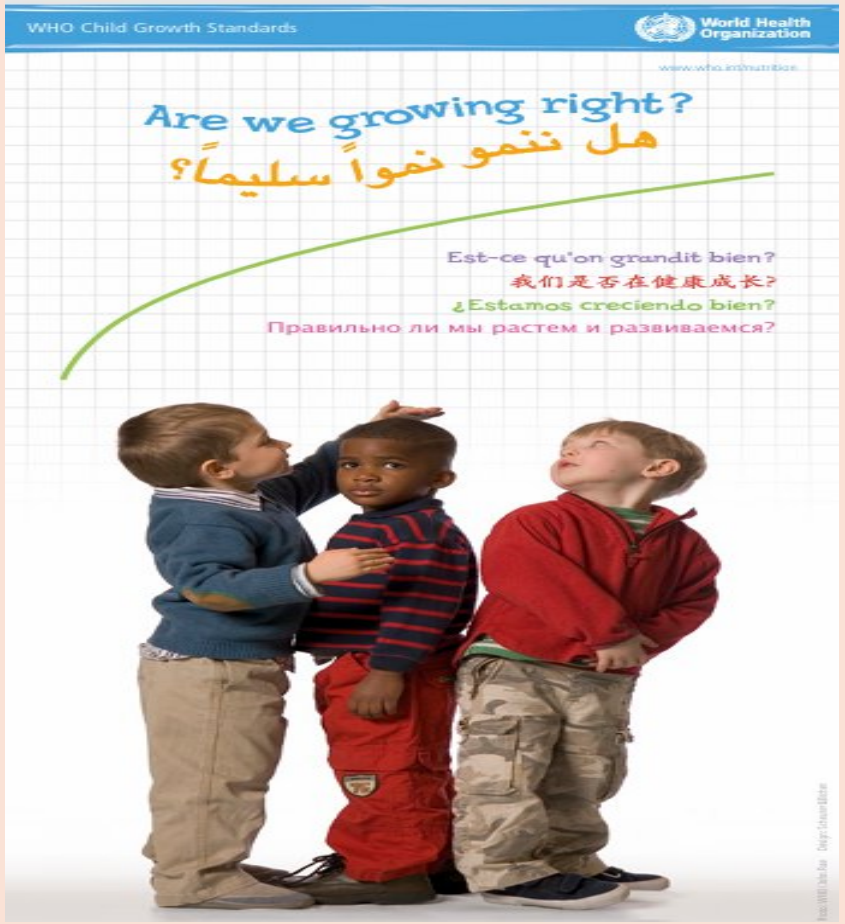
- Currently, there is no strong evidence for an optimal, universal schedule for well-care visits.
- The recommended schedule suggests a minimum of 17 visits between birth and 19 years, aligned with key developmental stages.
- This schedule should be adapted based on local contexts and specific population needs.

Recommended Schedule (Minimum 17 visits):

- Newborn (0–28 days): 3 visits (within 24h, 48–72h, 7–14 days).
- Infancy (1–11 months): 4 visits (6, 10, 14 weeks; 9 months).
- Early Childhood (1–4 years): 5 visits (12, 18, 24, 36, 48 months).
- Later Childhood (5–9 years): 2 visits (5–6 and 8–9 years).
- Adolescence (10–19 years): 2 visits (10–14 and 15–19 years).

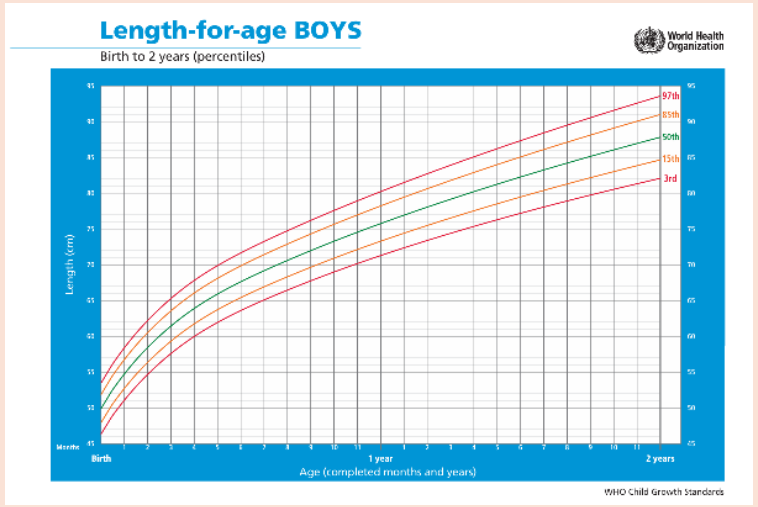
Child growth

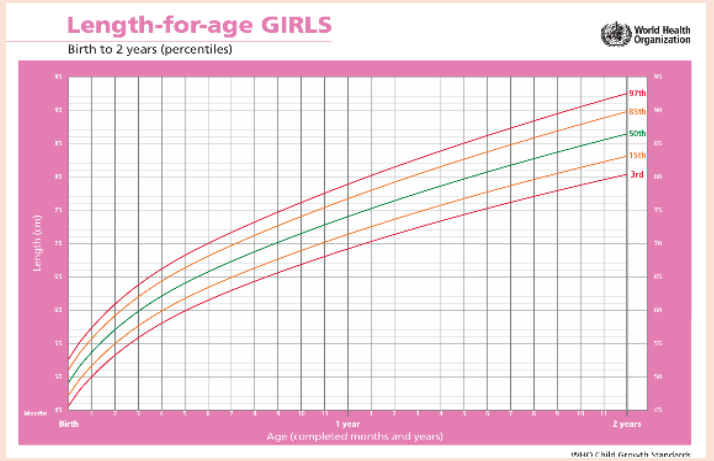
The WHO Child Growth Standards are a diagnostic tool used to monitor and assess the nutritional status of infants and young children worldwide. By tracking children's height and body weight, the standards detect children or populations not growing properly, or who are underweight or at risk of overweight, and who may require specific health services or public health responses.

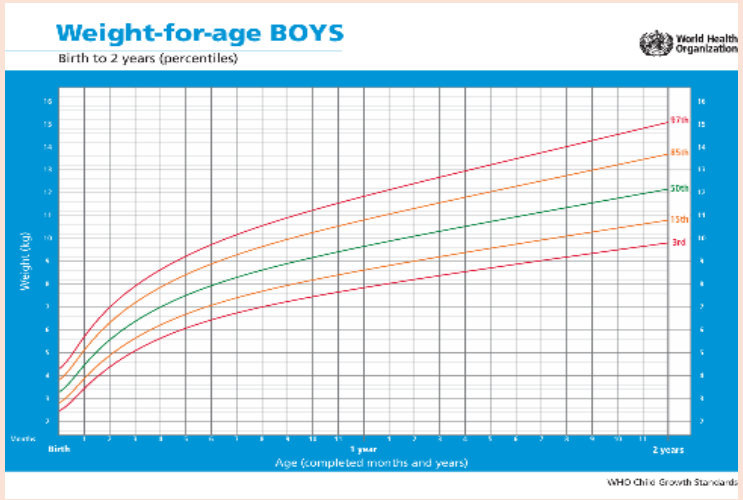


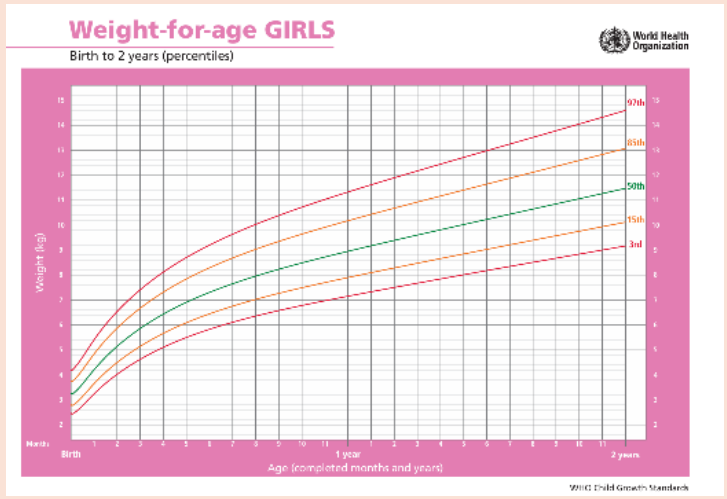
The WHO Child Growth Standards have charts for boys and girls separated, covering age birth to 5 years.

WHO Growth chart length/weight for age boys/girls from birth to 2 years









Malnutrition

Child malnutrition is a major public health issue worldwide. An estimated 144 million children under age 5 are stunted, 47 million are wasted and 38.3 million have overweight or obesity.

Around 45% of deaths among children under 5 years of age are linked to undernutrition.

Malnutrition

Child stunting refers to a child who is too short for his or her age and is the result of chronic or recurrent malnutrition. Stunting is a contributing risk factor to child mortality and is also a marker of inequalities in human development.

Child overweight refers to a child who is too heavy for his or her height. This form of malnutrition usually results from expending too few calories for the amount of food consumed or from endocrine disbalances, and it increases the risk of noncommunicable diseases later in life.

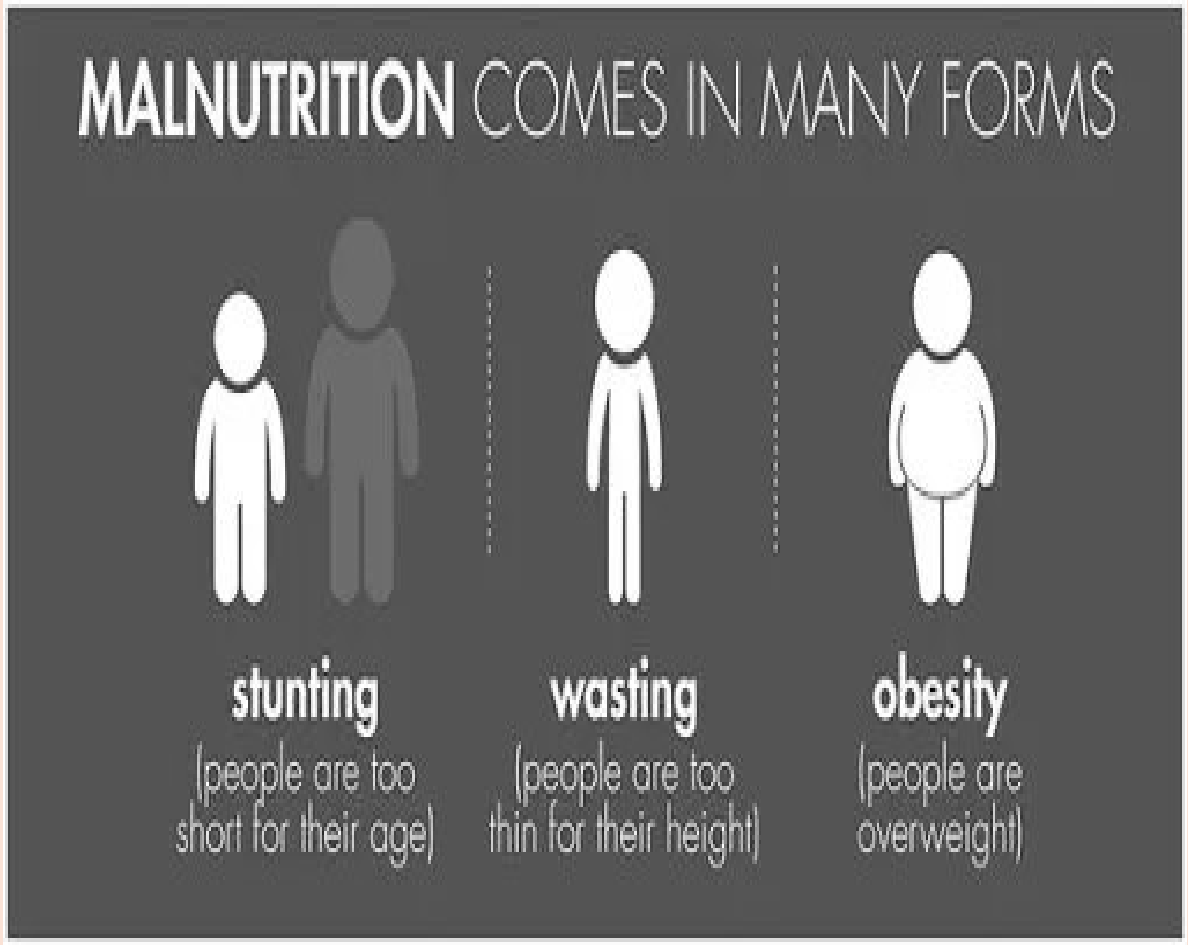
Child wasting refers to a child who is too thin for his or her height and is the result of recent rapid weight loss or the failure to gain weight. A child who is moderately or severely wasted has an increased risk of death, but treatment is possible.

Childhood wasting and overweight are both forms of malnutrition and can coexist in a population.

Jordan Population and Family Health Survey 2023

Nutritional Status of Children (Under Age 5)

- Stunting: 8% of children are stunted
- Wasting 2% of children are wasted
- Underweight: 3% of children are underweight
- Overweight: 9% of children are overweight



Nutrition for Healthy Term Infants (Birth to 6 Months) : breastfeeding

Exclusive Breastfeeding for 6 Months:

- Breastmilk is the optimal nutrition for infants, providing tailored nutrients, immune protection, and developmental benefits.
- Early initiation: Breastfeed within 1 hour of birth.
- Definition of "Exclusive": Only breastmilk (no water, formula, or solids), except for vitamin D supplements or prescribed medications.
- Benefits:
  - Infants: Reduced risk of infections (e.g., gastrointestinal, respiratory), SIDS, and chronic conditions (e.g., obesity). Supports cognitive development.
  - Mothers: Faster postpartum recovery, delayed return of menses, and long-term health benefits.

WHO/UNICEF Recommendations

Supporting Breastfeeding

- Policies:
  - Maternity Protection Conventions: Paid leave, workplace support.
  - International Code: Bans unethical marketing of breastmilk substitutes.
- Hospital practices (Baby-Friendly Initiative):
  - Skin-to-skin contact at birth.
  - Rooming-in (24/7 mother-baby proximity).
  - No pacifiers/formula unless medically necessary.
- Community support: Counseling, mother groups, health education.

The first hours and days after birth are critical for establishing breastfeeding, yet global practices often fall short, with many newborns not breastfed within the first hour. Inappropriate hospital procedures, like mother-infant separation and unnecessary supplementation, can hinder breastfeeding.

To address this, WHO and UNICEF launched the Baby-friendly Hospital Initiative (BFHI) in 1991 to encourage hospitals to support and protect breastfeeding

The BFHI is based on the Ten Steps to Successful Brea stfeeding, a set of evidence-based practices maternity facilities should implement.

While the BFHI has been implemented in almost all countries, global coverage remains low, with only an estimated 10% of babies born in a currently designated "Baby-friendly" facility as of 2017.

The Health Care Accreditation Council renewed the "Baby-Friendly Hospital" certification for both the Jordan University Hospital, Princess Haya Military Hospital, Al-Karak Governmental Hospital, the Specialty Hospital, and the Women and Children's Hospital from the Al-Bashir Hospitals Group.

Nutrition for Healthy Term Infants (6-12 Months) :

Continued breastfeeding: Up to 2 years or beyond, with safe complementary foods from 6 months.

When to Start complementary food: Around 6 months, when infants show readiness (e.g., sitting with little or no support, interest in food).

- Key Recommendations: First foods should be iron-rich (meat, poultry, fish, iron-fortified cereals). Iron supports brain development; stores deplete by 6 months.
- Introduce a variety of textures (pureed, mashed, lumpy) by 9 months to prevent feeding difficulties later.
- Progress to finger foods (soft fruits, cooked veggies, cheese) to encourage self-feeding.
- Avoid added salt, sugar, and honey (risk of botulism).
- Safety Considerations: Supervise all feedings to prevent choking.

Jordan Population and Family Health Survey 2023

- Early Initiation of Breastfeeding: only 34% of children were put to the breast within one hour of birth.
- Exclusive Breastfeeding (0-5 months): Only 24% of infants under 6 months are exclusively breastfed.
- Continued Breastfeeding (12-23 months): Only 24% of children aged 12-23 months are still breastfeeding.
- Bottle Feeding: 67% of children under 2 are fed using a bottle
- Introduction of Complementary Foods: 81% of children are introduced to solid/semisolid foods at the appropriate time (6-8 months)