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Comprehensive Developmental Assessment of a 12-Month-Old Male Infant Using Structured Outcome Measures in a Low-Risk Indian Population – A Case Report

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Abstract
Developmental screening during infancy is crucial for identifying neurodevelopmental delays and supporting early interventions. This case report outlines a detailed developmental assessment of a 12-month-old Indian male infant with no identifiable risk factors. The evaluation employed the Ages and Stages Questionnaire, Third Edition (ASQ-3), along with clinical observation and physical examination. The child demonstrated age-appropriate development across all domains—communication, gross motor, fine motor, problem-solving, and personal-social skills. The report contributes to normative Indian pediatric data and advocates for routine structured developmental screening as part of community pediatric physiotherapy services.

Keywords: Developmental screening, Infant milestones, Ages and Stages Questionnaire (ASQ), Pediatric physiotherapy, Case report

I. Introduction
The first year of life is a critical window for neurological and behavioral development. Early identification of developmental delays enables timely intervention, improving long-term outcomes. Structured tools like the Ages and Stages Questionnaire, Third Edition (ASQ-3) provide valid and reliable developmental assessment, particularly in low-resource and community settings. This case report documents a comprehensive assessment of a typically developing infant using standardized outcome measures, offering a reference for clinicians and researchers in pediatric physiotherapy.

II. Case Study

A. Demographic and Perinatal Profile
- Age: 12 months
- Gender: Male
- Location: Vadodara, Gujarat
- Birth Weight: 2.8 kg
- Gestational Age: 39 weeks
- Delivery Mode: Vaginal
- Apgar Score: 8 at 1 minute, 9 at 5 minutes
- Cry at Birth: Immediate
- NICU Admission: Not required
- Neonatal Complications: None reported

B. Feeding and Immunization

- Feeding: Exclusively breastfed for six months; complementary foods introduced thereafter
- Immunizations: Complete as per national immunization schedule up to 12 months

C. Family and Social History

- No parental consanguinity
- No family history of developmental delay, genetic, or neurological conditions
- Socioeconomic status: Middle-income urban family

III. Outcome Measures

A. Ages and Stages Questionnaire, Third Edition (ASQ-3) – 12-Month Interval

Domain	Score	Interpretation
Communication	55	Normal
Gross Motor	50	Normal
Fine Motor	55	Normal
Problem Solving	50	Normal
Personal-Social	55	Normal

B. Denver Developmental Screening Test II (DDST-II)

Observations:

- Gross Motor: Pulls to stand, cruises with support, walks with assistance
- Fine Motor: Transfers objects, pincer grasp, stacks blocks
- Language: Imitates sounds, responds to name, babbles meaningfully
- Social/Emotional: Plays peek-a-boo, expresses affection, follows gestures
- Cognitive: Identifies familiar people, searches for hidden objects

IV. Physical Examination

Parameter	Result
Weight	8.5 kg
Height	75 cm
Head Circumference	46 cm
Muscle Tone	Normal
Reflexes	Age-appropriate
Sensory Responses	Normal (visual and auditory)

V. Discussion

This case demonstrated that even in the absence of perinatal complications or family history of developmental concerns, a structured developmental assessment provides reassurance and valuable guidance for parents. The ASQ-3 was an effective, culturally appropriate, and parent-friendly tool for assessing milestones. Results from both ASQ-3 and DDST-II were consistent, confirming age-appropriate development.

As India moves toward more community-based child health surveillance, integrating developmental screening in physiotherapy and primary care settings is imperative. This case contributes normative data for typically developing Indian infants, particularly from urban Gujarati populations.

VI. Conclusion

The 12-month-old male infant assessed in this case displayed appropriate developmental skills across all major domains. Structured developmental surveillance using ASQ-3 and clinical observation can effectively track milestone progression in low-risk infants. Routine monitoring, even in asymptomatic children, ensures early identification and appropriate parental counseling.

VII. Recommendations

- Continue routine developmental surveillance at 18 and 24 months
- Engage parents in play-based stimulation programs
- Use of mobile-based or app-integrated milestone checklists in native languages for early community screening

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Ethical Statement

Informed written consent was obtained from the child's parent/guardian for anonymized use of clinical data in academic publications. No identifying information is disclosed.

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