

LONGITUDINAL FAMILY ACCOMPANIMENT IN THE FIRST 1.000 DAYS: FROM VERY HIGH-RISK PREGNANCY TO 18-MONTH CHILD DEVELOPMENT: A CASE STUDY

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Abstract

Background: The first 1,000 days of life extend from conception to a child's second birthday and represent a critical period for maternal and child health. Longitudinal family accompaniment may support maternal risk identification, neonatal follow-up, feeding practices, and growth and developmental monitoring. **Case:** A 27-year-old woman with obesity and a high-risk obstetric history received longitudinal accompaniment during the first 1,000 days of life. In the third trimester, breech presentation was identified and the pregnancy risk-screening score was 20, indicating very high risk. A term female infant was delivered by caesarean section because of maternal hypertension and fetal malposition. Birth weight was 2,750 g, length was 47.7 cm, and the recorded Apgar score was 8. Clinical neonatal jaundice resolved on follow-up. Complementary feeding before six months was identified as the priority problem and addressed through family education. At 18 months, the child's weight was 10.6 kg, length 80.5 cm, and head circumference 46.5 cm; nutritional status was recorded as good and developmental prescreening was age-appropriate. **Conclusion:** This case illustrates continuity of family-centred accompaniment from very high-risk pregnancy to 18 months. Causal effects cannot be inferred from a single case without a comparator.

Keywords: child growth and development; family accompaniment; first 1,000 days of life; high-risk pregnancy; neonatal jaundice

INTRODUCTION

The first 1,000 days of life extend from conception until a child reaches two years of age. This period is important because physical growth, brain development, immune-system maturation, and the establishment of feeding practices occur rapidly. The World Health Organization positions maternal, newborn, infant, and young-child nutrition interventions as interconnected actions across this period (World Health Organization, 2013). Indonesia's Maternal and Child Health Handbook also emphasises continuous monitoring from pregnancy and childbirth through the postpartum, neonatal, and early-childhood periods (Kementerian Kesehatan Republik Indonesia, 2024).

This report aims to describe the longitudinal accompaniment of one family during the first 1,000 days of life, beginning with the identification of a very high-risk pregnancy, continuing through delivery and neonatal problems, and extending to the assessment of the child's growth and development at 18 months of age. The report follows the main elements of the CARE Guidelines for case reporting, with adaptations because the principal intervention consisted of family accompaniment and education (Gagnier et al., 2014).

LITERATURE REVIEW

Pregnancy with risk factors requires early detection and an adequate referral plan. Integrated antenatal care is intended to identify risk factors, obstetric complications, and medical problems as early as possible so that pregnant women receive care appropriate to their needs (Kementerian Kesehatan Republik Indonesia, 2020a). Continuity of monitoring remains important after delivery because neonatal problems, feeding practices, immunisation, growth, and development may emerge at different stages (Kementerian Kesehatan Republik Indonesia, 2020b).

A family-centred approach is relevant because child health is influenced by caregivers' ability to recognise danger signs, provide appropriate nutrition, offer developmental stimulation, and use health services. The Nurturing Care Framework integrates good health, adequate nutrition, responsive caregiving, security and safety, and opportunities for early learning as foundations for child development (World Health Organization, United Nations Children's Fund, & World Bank Group, 2018). These concepts provide the basis for viewing longitudinal family

accompaniment as a process of risk recognition, education, referral support, and repeated monitoring rather than as a single clinical intervention.

METHOD

Design and Data Sources

This manuscript is a descriptive longitudinal case study based on records of family accompaniment during the first 1,000 days of life. Data were obtained from family interviews, pregnancy examinations, risk screening, delivery and neonatal records, feeding and immunisation monitoring, anthropometric measurements, the Pre-Screening Developmental Questionnaire (Kuesioner Pra Skrining Perkembangan [KPSP]), and records of education and follow-up. Inferential analysis was not performed because the report involved only one case unit.

Anonymisation

The names of the mother, child, husband, and health professionals, as well as identification numbers, telephone numbers, detailed address information, village and banjar names, health-insurance numbers, and photographic documentation, were omitted. Age and clinically relevant characteristics were retained. Specific dates were presented only when necessary, or otherwise expressed as sequential phases, when complete dates were not required for scientific interpretation.

Outcome Assessment

The outcomes described were the mother's condition during pregnancy and delivery, the infant's neonatal condition, breastfeeding and complementary-feeding practices, immunisation status, anthropometric measurements, and developmental screening at 18 months. WHO Child Growth Standards were used as the framework for interpreting child anthropometry, while development was reported according to the KPSP category documented in the monitoring records (World Health Organization, 2006; Kementerian Kesehatan Republik Indonesia, 2024).

RESULTS AND DISCUSSION

Maternal and Family Information

A 27-year-old woman lived with her nuclear family in an area of Gianyar Regency, Bali. Her highest completed education was primary school, and the family had health-insurance coverage. Family function, assessed using the Family APGAR, was recorded as good from both the mother's and the family's perspectives. Housing conditions, sanitation, and family support were generally considered adequate.

At the initial assessment, the mother's height was 150 cm and her weight was 92 kg, and her nutritional-status assessment categorised her as having obesity. Obstetric records indicated a multiparous pregnancy with a history of pregnancy failure or fetal death. The gravida, parity, and abortion notation was not used in this report because several records were not fully consistent. A history of hypertension was also documented in the maternal health records.

Pregnancy and Birth Planning

During the third trimester, maternal weight was 95 kg, blood pressure was 131/70 mmHg, fundal height was 24 cm, the fetal heart rate was within 120-160 beats per minute, and the fetus was in breech presentation. The risk-screening instrument produced a total score of 20, which was categorised as a very high-risk pregnancy. Recorded components included a history of pregnancy failure, a history of infusion or transfusion, a history of intrauterine fetal death, and breech presentation. The family planned hospital delivery with an obstetrician-gynaecologist, available financing, and support from the husband.

Delivery and Neonatal Period

Delivery occurred at term in hospital by caesarean section. The delivery record identified maternal hypertension and fetal malposition or breech presentation as complications. Two hours after delivery, maternal blood pressure was 145/86 mmHg, pulse was 90 beats per minute, uterine contraction was strong, and postpartum haemorrhage was not recorded. The term pre-eclampsia appeared on an assessment form, but proteinuria data, laboratory results, and a definitive diagnosis were unavailable. For this reason, the report uses the term maternal hypertension.

A female infant was born weighing 2,750 g and measuring 47.7 cm in length. Head circumference was recorded as 35/33 cm. The infant cried immediately, was described as pink throughout the body, and had a recorded Apgar score of 8. Vitamin K and hepatitis B immunisation were administered. Clinical jaundice involving the eyes

and body was documented during the neonatal period, and the infant was referred for evaluation. The records did not include serum or transcutaneous bilirubin values, the aetiology of jaundice, or documentation of phototherapy. At subsequent monitoring, the infant was reported to be active and no longer jaundiced, so improvement can only be described from the clinical observations recorded during accompaniment.

Infant Feeding and Problem Identification

During the early phase, the infant received both breast milk and formula because the mother perceived her milk production as insufficient. Complementary porridge was reported to have been introduced before six months of age. Problem prioritisation identified early complementary feeding as the main issue, followed by the history of neonatal jaundice and maternal hypertension. The recorded root cause was limited knowledge about the appropriate timing of complementary feeding.

Education covered continued breastfeeding until two years of age, age-appropriate complementary feeding, three main meals and one to two snacks per day, variety in carbohydrate sources, animal and plant proteins, vegetables, fruit, adequate fluids, food hygiene, and danger signs requiring prompt assessment. WHO recommendations support exclusive breastfeeding for six months, followed by adequate complementary feeding while breastfeeding continues until two years of age or beyond (World Health Organization, 2023a, 2023b).

Growth and Development Monitoring

Accompaniment continued through the 13th visit. At approximately 17 months, the child had no reported complaints, weighed 10.6 kg, and measured 80.5 cm in length. At 18 months, weight remained 10.6 kg, length was 80.5 cm, and head circumference was 46.5 cm. Nutritional status was recorded as good. KPSP documentation indicated age-appropriate gross motor, fine motor, speech-language, and social-independence abilities, with development categorised as appropriate. Basic and follow-up immunisations were also recorded in the Maternal and Child Health Handbook.

Weight increased from 2.75 kg at birth to 5.8 kg at six months and 10.6 kg at 18 months, representing an absolute increase of 7.85 kg from birth to 18 months. The available measurements are shown in Figure 1. Because no measurements were documented between 7 and 16 months of age, the line connecting the six-month and 17-month measurements indicates only the sequence of observations and should not be interpreted as a measured month-to-month trajectory.

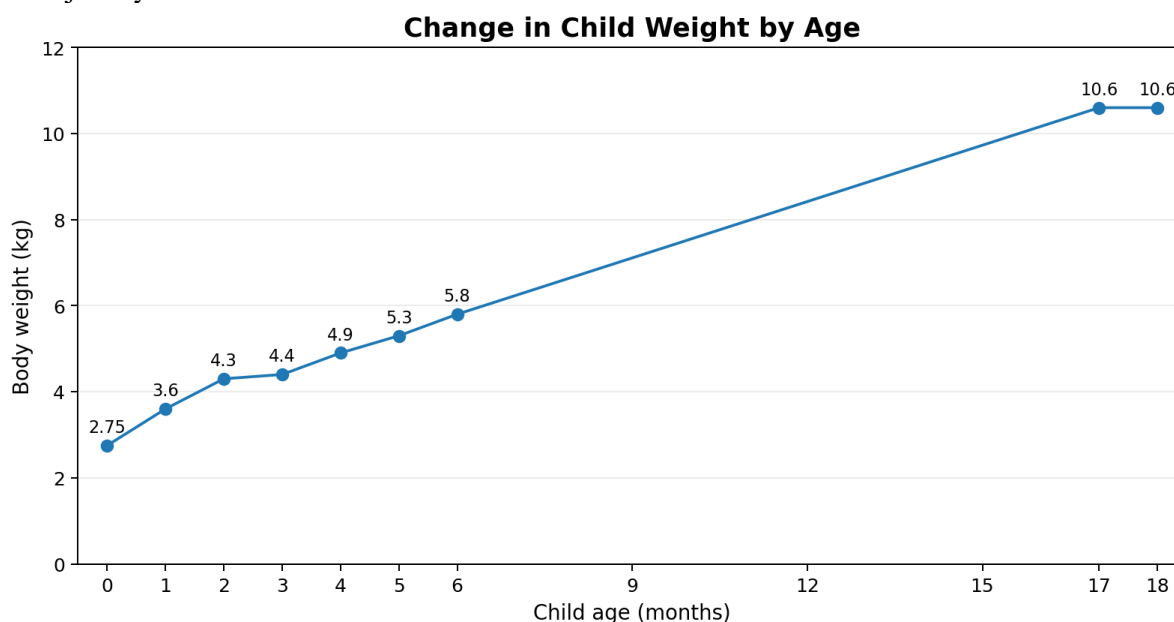


Figure 1. Change in child weight from birth to 18 months of age

Note. No documented measurements were available from 7 to 16 months of age.

The family received counselling to obtain regular measurements of weight, length or height, and head circumference; record results in the Maternal and Child Health Handbook; continue visits to the integrated health post (Posyandu) or community health centre (Puskesmas); and provide stimulation through walking, ball play, scribbling, naming body parts, singing, reading stories, putting toys away, and supervised shared play. Monitoring

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weight-for-age, length- or height-for-age, and weight-for-length or height against WHO standards is needed to assess growth trajectories rather than relying on a single measurement (World Health Organization, 2006).

Case Timeline

Table 1. Case timeline from pregnancy to 18 months of age

Period	Activity	Main findings	Follow-up
Pregnancy	Initial assessment	Mother aged 27 years; obesity; good family support; high-risk obstetric history.	Identification of maternal, family, home, and healthcare-access factors.
Third trimester	Antenatal screening	Breech presentation; risk score 20; hospital delivery planned.	Education on danger signs, birth preparedness, and family support.
Term delivery	Hospital delivery	Caesarean section; maternal hypertension; fetal malposition.	Monitoring of mother and infant and follow-up planning.
Neonatal	Infant assessment	Birth weight 2,750 g; length 47.7 cm; Apgar 8; clinical jaundice.	Referral/evaluation, breastfeeding support, and clinical monitoring.
0-6 months	Feeding monitoring	Breast milk and formula; complementary food introduced before 6 months.	Priority problem identified; education on breastfeeding and timing of complementary feeding.
6-17 months	Periodic monitoring	Growth continued; immunisations recorded; no recurrent severe infection documented.	Nutrition counselling, food hygiene, danger-sign education, and routine follow-up.
18 months	13th visit	Weight 10.6 kg; length 80.5 cm; head circumference 46.5 cm; good nutritional status; KPSP appropriate for age.	Stimulation education; Maternal and Child Health Handbook monitoring; Posyandu/Puskesmas follow-up.

High-Risk Pregnancy and Continuity of Care

A risk score of 20, an adverse obstetric history, obesity, maternal hypertension, and breech presentation provided strong reasons to plan delivery at a facility capable of operative obstetric care. Observational evidence and systematic review findings indicate that maternal adiposity is associated with increased risks of several adverse maternal outcomes, including hypertensive disorders and operative delivery, although such relationships cannot be assessed causally in a single case (Heslehurst et al., 2022). In this case, hospital delivery and specialist involvement were consistent with risk-based referral principles.

Diagnostic recording should be distinguished from screening findings. The assessment sheet listed hypertension/pre-eclampsia, whereas the available evidence consisted mainly of blood-pressure measurements and did not include proteinuria results or other supporting investigations. Consequently, this report does not establish a diagnosis of pre-eclampsia. This distinction prevents the manuscript from extending a diagnosis beyond the available primary data.

Neonatal Jaundice

Jaundice is a common neonatal finding, but clinical risk depends on age in hours, gestational age, bilirubin concentration, neurotoxicity risk factors, and the rate of bilirubin increase. The American Academy of Pediatrics guideline recommends objective bilirubin measurement and follow-up based on the bilirubin concentration in relation to the phototherapy threshold (Kemper et al., 2022). In this case, no bilirubin value was available, so severity and treatment indications could not be reconstructed.

The accompaniment record included advice to expose the infant to sunlight. In a scientific case report, this practice cannot be presented as a substitute for bilirubin measurement or standardised phototherapy. A safer educational message is to ensure adequate feeding, recognise worsening jaundice or other danger signs, and seek assessment by a health professional. The absence of bilirubin documentation also identifies an area for improving data collection in future accompaniment.

Infant and Young Child Feeding

Introducing complementary food before six months was a behavioural issue that could be addressed through education. WHO recommends exclusive breastfeeding during the first six months and the introduction of adequate

complementary foods from six months while breastfeeding continues (World Health Organization, 2023a). In this case, education addressed timing, dietary diversity, texture, feeding frequency, hygiene, and responses to danger signs. Changes in maternal knowledge were reported narratively but were not measured using pre-test and post-test instruments, so the effectiveness of the educational intervention could not be quantified.

Growth, Development, and the Role of the Family

At 18 months, anthropometric measurements and KPSP findings were considered age-appropriate according to the monitoring record. This interpretation should be understood as a snapshot at a single time point and should be followed by serial assessment. WHO growth standards provide weight-for-age, length- or height-for-age, weight-for-length or height, and body-mass-index-for-age indicators for children up to five years of age (World Health Organization, 2006). Serial monitoring can help identify growth faltering that may not be apparent from one isolated measurement.

Good family support was an important resource. Education was directed not only to the mother but also toward enabling the family to attend routine health services, provide a varied diet, offer developmental stimulation, and recognise danger signs. This approach is consistent with nurturing care, which places responsive caregiving and opportunities for early learning alongside health, nutrition, and safety (World Health Organization, United Nations Children's Fund, & World Bank Group, 2018).

Strengths and Limitations

The principal strength of this report is the continuity of observation from pregnancy through 18 months of age. It covers multiple domains of maternal and child health and documents interactions among clinical problems, feeding behaviour, and family support. The case also demonstrates the application of a community-oriented medical approach within one accompanied family.

Limitations include the single-case design without a comparator, partial reliance on family reports, missing laboratory results and medical records, and inconsistencies in dates and selected check boxes on several forms. Bilirubin values were unavailable to validate the severity of neonatal jaundice, complete pre-test and post-test knowledge scores were not recorded, and serial anthropometric data were insufficient to calculate all z-scores over time. The report is therefore descriptive and does not demonstrate that accompaniment caused the observed outcomes.

CONCLUSION

Longitudinal accompaniment during the first 1,000 days of life in one family enabled sequential identification of a very high-risk pregnancy, maternal hypertension and breech presentation, neonatal jaundice, early complementary feeding, and the need for continued growth and developmental monitoring. At 18 months, the child was recorded as having good nutritional status and age-appropriate development. These findings illustrate the practical value of family-centred accompaniment for detection, education, and reinforcement of referral and follow-up, but they cannot be generalised or interpreted as evidence of the effectiveness of accompaniment.

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