

Midwifery Care for a Newborn with Low Birth Weight through Kangaroo Mother Care

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A B S T R A C T

Background: Low Birth Weight (LBW) infants are defined as neonates weighing less than 2,500 grams at birth, regardless of gestational age. This group of infants is highly vulnerable to neonatal morbidities such as hypothermia, respiratory distress, and long-term growth and developmental delays, thus requiring comprehensive midwifery care. Objective: This case study aims to implement comprehensive midwifery care in accordance with standard operating procedures for newborns with LBW at the Mawasangka Tengah Community Health Center in Central Buton Regency. Methods: This case study was designed using Varney's seven-step midwifery management approach and SOAP-based documentation. The subject of observation was the infant of Mrs. "S," with a birth weight of 2,100 grams at 38 weeks and 1 day of gestation. Clinical data were collected through interviews, direct observation, neonatal physical examinations, and review of medical records. Results: The infant was born spontaneously and cried loudly immediately after birth; however, as a LBW infant, the infant exhibited weak sucking ability and was at high risk for hypothermia. Clinical interventions provided included periodic monitoring of vital signs, body temperature regulation, nutritional support through exclusive on-demand breastfeeding, lactation education, self-care of the umbilical cord, daily weight monitoring, and promotion of Kangaroo Mother Care (KMC). Post-care evaluation showed that the infant's condition remained stable, body temperature was normal, and no further complications were found. Conclusion: A holistic midwifery care approach has proven effective in maintaining the physiological stability of newborns, preventing the onset of serious complications, and optimizing the growth process in infants with a history of low birth weight.

INTRODUCTION

Low Birth Weight (LBW) is medically defined as a condition in which a newborn weighs less than 2,500 grams, regardless of gestational age. This suboptimal anthropometric condition places the neonate at a high level of clinical vulnerability because the maturity of its organs has not yet fully developed. The effects of this functional immaturity make this group of newborns highly susceptible to acute respiratory distress, hypoglycemia, and impaired thermoregulation. Their thin subcutaneous fat layer and limited glycogen reserves lead to a high risk of body temperature dropping below normal (or hypothermia) if not treated promptly (Ihsani & Hendrati, 2023).

The issue of neonatal mortality due to low birth weight remains a significant challenge for health care services to this day. Nationally, data from health profiles show that low birth weight continues to rank as the leading direct cause of the Infant Mortality Rate (IMR). The emergence of this clinical phenomenon is influenced by complex risk factors, including maternal nutritional status during pregnancy, a history of obstetric complications, and exposure to secondhand smoke. The government is committed to reducing this burden of morbidity through the standardization of services at primary health care facilities in order to accelerate the achievement of the sustainable development goals set by the Indonesian Ministry of Health (Kemenkes RI, 2024).

The urgency of this study is based on a real gap between basic medical theory and the objective reality of cases in the field. Most references from the World Health Organization (WHO) state that low birth weight infants are identical to preterm births resulting from a short gestational period. However, the results of this study reveal a unique case in which this condition occurs in neonates with a mature gestational age or term infants. The birth of a small-for-gestational-age (SGA) infant at 38 weeks and 1 day of gestation with a birth weight of 2,100 grams forms the basis for the novelty of this research (Gumogar et al., 2026).

The essential non-pharmacological solution to address this clinical anomaly is the implementation of comprehensive midwifery care management. The standard interventions provided by midwives focus on preventing hypothermia through warm swaddling, regular monitoring of vital signs, and prevention of umbilical cord infection. Nutritional and fluid requirements are met through exclusive breastfeeding on demand to stimulate a strong sucking reflex. In addition, daily weight gain is stimulated through collaboration using the Kangaroo Mother Care (KMC) technique in accordance with applicable operational standards (Gemilastari et al., 2024).

The initial findings in the subject of Baby Ms. "S" at birth showed a birth weight of 2,100 grams with a still weak sucking ability. After continuous care was provided using Varney's seven-step management, the neonate's condition stabilized and the body weight increased to 2,300 grams. The success of this clinical implementation at the primary care level underlies the importance of documenting this case report in a structured and systematic manner. Therefore, this study aims to analyze the implementation of comprehensive midwifery care based on the SOAP model at the UPTD Community Health Center of Mawasangka Tengah, Central Buton Regency.

METHODOLOGY

This study used a descriptive approach with a case study design through the implementation of Varney's seven-step midwifery management and progress notes in SOAP format. This case study was conducted at the UPTD Community Health Center of Mawasangka Tengah, Central Buton Regency, Southeast Sulawesi Province. The study took place from December 1, 2025, to January 22, 2026.

The subject of this case study was a neonate, Baby "S", who was born with low birth weight (LBW) of 2,100 grams. The types of data collected included primary data and secondary data. Data collection techniques were carried out comprehensively through direct clinical observation of the neonate, in-depth interviews with the baby's mother, general physical examination, and documentation techniques using secondary data in the form of official medical records from the Mawasangka Tengah Community Health Center. Data analysis was conducted by reducing, interpreting, and presenting clinical data narratively based on the stages of midwifery management to draw conclusions regarding the development of the subject's health condition (Cholifah & Rinata, 2022). All processes in this case study adhered to the principles of health research ethics, including the signing of an informed consent form by the respondent, the use of initials without the real name, and the assurance of information confidentiality protection.

RESULTS & DISCUSSION

Subjective Data

On December 22, 2025, at 16:06 WITA, the mother reported delivering her third child spontaneously at Mawasangka Tengah Primary Health Center. The infant was born in occiput posterior presentation, cried strongly immediately after birth with an Apgar score of 7/10. The mother reported that the infant's sucking ability was still weak, but she was willing to provide exclusive breastfeeding and comply with infant care recommendations. During home monitoring, the mother reported that the infant's condition progressively improved. Sucking and swallowing abilities increased, the infant slept peacefully, and exclusive breastfeeding was maintained. The mother was also able to independently perform Kangaroo Mother Care (KMC).

Objective Data

The infant was born at 38 weeks and 1 day of gestation with a birth weight of 2,100 grams, length 48 cm, head circumference 29 cm, chest circumference 34 cm, abdominal circumference 26 cm, and upper arm circumference 6 cm. Initial vital signs were: heart rate 137 beats/minute, respiratory rate 41 breaths/minute, and temperature 37.1°C. Physical examination revealed pink conjunctiva, slightly dry lips, thin skin with minimal subcutaneous fat, a clean umbilical cord without bleeding, and a weak sucking reflex. No structural or congenital abnormalities were found. Follow-up monitoring showed weight gain to 2,300 grams at 11 days of age and 2,610 grams at 21 days of age, with stable vital signs. Sucking and swallowing abilities improved, and the umbilical cord detached completely without signs of infection.

Analysis

Based on the assessment, Infant "S" was diagnosed as Term Infant, Small for Gestational Age (SGA), Occiput Posterior Presentation (OPP) with Low Birth Weight (LBW). The potential complication anticipated was risk of hypothermia related to low birth weight and minimal subcutaneous fat. Subsequent development showed improvement, as evidenced by weight gain, improved sucking and swallowing, stable body temperature, and no signs of infection.

Management

Care was directed toward maintaining infant warmth, meeting nutritional needs through exclusive breastfeeding, teaching correct breastfeeding techniques, implementing KMC, providing umbilical cord care, monitoring elimination and weight, and observing vital signs. The mother and family received health education on LBW infant care, infant and environmental hygiene, danger signs in newborns, and the importance of avoiding cigarette smoke exposure. KMC was continued independently at home while maintaining exclusive breastfeeding. Evaluation results showed that the infant maintained a stable body temperature, improved sucking and swallowing, progressive weight gain from 2,100 grams to 2,610 grams, and complete detachment of the umbilical cord without infection.

DISCUSSION

Subjective Data

Based on the subjective assessment on December 22, 2025, the mother reported giving birth to her third child spontaneously at Mawasangka Tengah Health Center at 16:06 WITA. The infant was born with occiput posterior presentation and cried immediately with an Apgar score of 7/10. The mother also reported that the infant had weak sucking ability. This indicates that early monitoring of feeding ability and nutritional needs was required.

Weak sucking is a concern in LBW infants because adequate nutrition is needed to support growth and development. LBW infants may experience feeding difficulties; thus, sucking ability must be considered in meeting nutritional needs. In the case of Infant "S", nutritional needs were met through exclusive breastfeeding with support for correct breastfeeding techniques. Subsequent progress showed that the mother continued exclusive breastfeeding and the infant's sucking ability improved (Suarni et al., 2024).

At the first home visit on January 2, 2026, the mother reported that the infant was in good condition, able to suck well, slept soundly, and continued exclusive breastfeeding. This showed improvement in nutritional intake through breastfeeding. At the second visit on January 12, 2026, the mother reported further improvement: the infant could suck strongly and swallow well. The mother

was also able to perform Kangaroo Mother Care (KMC) independently at home. Maternal involvement in KMC supports continuity of care for LBW infants at home. This was evident in Infant "S", as the mother not only received education but also applied KMC independently (Wulaningsih et al., 2023).

Objective Data

Objective examination showed that Infant "S" was born at 38 weeks and 1 day of gestation with a birth weight of 2,100 grams. Based on gestational age, the infant was classified as term, while based on birth weight, the infant was categorized as Low Birth Weight (LBW). Although prematurity is associated with LBW, this case shows that LBW can also occur in term infants. A low birth weight at 38 weeks and 1 day indicates Small for Gestational Age (SGA) (Blencowe et al., 2025).

Anthropometric measurements were: weight 2,100 grams, length 48 cm, head circumference 29 cm, chest circumference 34 cm, abdominal circumference 26 cm, and upper arm circumference 6 cm. These findings indicate the need for growth monitoring. Birth weight is a key basis for assessing LBW infants. In Infant "S", these measurements guided periodic growth monitoring (Gemilastari et al., 2024).

The condition of a term infant with a birth weight of 2,100 grams shows a discrepancy between gestational age and birth weight. SGA is characterized by birth weight below the expected range for gestational age. In this case, the weight and gestational age support the diagnosis of SGA (Ma'rifah & Endartiwi, 2024).

Physical examination revealed thin skin and minimal subcutaneous fat. This condition increases the risk of heat loss due to limited fat reserves. Limited subcutaneous fat is a factor that increases the risk of hypothermia in LBW infants. Therefore, temperature monitoring and maintaining warmth were important in the care of Infant "S" (Lestari & Triana, 2024).

Body temperature was 37.1°C at birth, 36.8°C at the first visit, and 36.7°C at the second visit. No signs of hypothermia were found during monitoring. Maintaining body temperature is essential in LBW care to prevent hypothermia. The stable temperature of Infant "S" indicates that thermoregulation was well maintained (Sarnah et al., 2020).

Analysis

Based on subjective and objective findings, the initial analysis for Infant "S" was Term Infant, SGA, Occiput Posterior Presentation with the problem of LBW. LBW was determined by a birth weight of 2,100 grams, while term status was based on a gestational age of 38 weeks and 1 day. This shows that LBW in this case was not due to preterm birth but occurred in a term infant with low birth weight.

Gestational age and birth weight are important in assessing infant growth. A term infant with birth weight below the expected range for gestational age is categorized as SGA. In Infant "S", term gestational age with a birth weight of only 2,100 grams indicates the need for attention to fetal growth during intrauterine life (Ma'rifah & Endartiwi, 2024).

Maternal nutritional factors can be considered as one of the aspects related to fetal growth and development during pregnancy. However, in the case of Infant "S" there were insufficient data to establish maternal nutritional status as the direct cause of LBW. Therefore, maternal nutrition can only be considered in the discussion and cannot be determined as the main etiology in this case (Nababan & Waruwu, 2025).

A potential problem identified was the risk of hypothermia. This was based on low birth weight and minimal subcutaneous fat. LBW infants have a higher risk of heat loss and require efforts to maintain normal body temperature. In Infant "S", this risk did not develop into hypothermia because body temperature remained stable during monitoring (Lestari & Triana, 2024).

Management

Management of Infant "S" focused on meeting the basic needs of LBW infants and preventing complications. Care included maintaining warmth, exclusive breastfeeding, breastfeeding technique education, umbilical cord care, monitoring of elimination, weight, and vital signs, and health education for the mother and family.

Exclusive breastfeeding was provided to meet nutritional needs. At initial assessment, sucking reflex was weak, so the mother received guidance on correct breastfeeding techniques. Adequate

nutrition through breastfeeding is essential for growth in LBW infants. In Infant "S", sucking ability improved at follow-up visits until the infant could suck and swallow well (Suarni et al., 2024).

Maintaining body temperature was done through warmth and KMC. Temperature maintenance is important in LBW care due to higher risk of heat loss. This was relevant to Infant "S" who had low birth weight and minimal subcutaneous fat. During monitoring, body temperature remained stable with no signs of hypothermia (Lestari & Triana, 2024).

KMC was implemented as complementary care with direct maternal involvement. KMC in LBW infants can improve outcomes, including weight gain. In this case, KMC was performed continuously and by the second visit the mother was able to perform it independently at home (Wulaningsih et al., 2023).

Weight gain was an indicator of progress. Weight increased from 2,100 grams at birth to 2,300 grams at 11 days and 2,610 grams at 21 days. This shows growth during the monitoring period. KMC, together with exclusive breastfeeding and growth monitoring, supports the physiological stability and growth of LBW infants (Lubis et al., 2024).

Umbilical cord care involved keeping the cord clean and dry and monitoring for signs of infection. At the first visit the cord was slightly moist but clean. At the second visit the cord had detached completely without signs of infection. Infection prevention is essential in newborn care. In Infant "S", cord care was successful until detachment (Suhartati et al., 2023).

Environmental monitoring was also provided, including advice to avoid cigarette smoke exposure. Environmental factors support infant growth and development. Health education on a smoke-free environment for Infant "S" was a preventive effort to create conditions supportive of growth (Fadmi et al., 2026).

Overall, the management provided to Infant "S" resulted in stable body temperature, improved sucking and swallowing, progressive weight gain, and complete cord detachment without infection. The mother's ability to provide exclusive breastfeeding and perform KMC independently shows that education was effectively implemented. These results indicate that care focused on nutrition, warmth, KMC, growth monitoring, and infection prevention can support the well-being of term LBW infants with SGA.

Table 1. Clinical Development Progress

Clinical Parameter	Birth Data (22 Dec 2025)	Visit I (2 Jan 2026)	Visit II (12 Jan 2026)	Developmental Status
Body Weight (Grams)	2,100	2,300	2,610	Increased (+510 grams)
Body Temperature (°C)	37.1	36.8	36.7	Stable (Normal)
Heart Rate (beats/min)	137	140	137	Stable (Normal)
Respiratory Rate (breaths/min)	41	48	45	Stable (Normal)
Sucking Reflex	Weak	Good/Strong	Very Strong	Markedly Strengthened
Umbilical Cord Condition	Moist, Clean	Slightly Moist, Clean	Completely Detached, Clean	Normal Separation

Source: Processed Primary Data, 2026



Figure 1. First Home Visit



Figure 2. Second Home Visit

CONCLUSION

The conclusion of this case study indicates that baseline data assessment for Mrs. S's newborn successfully established a midwifery diagnosis of a term neonate presenting with a low birth weight (LBW) of 2,100 grams. Anticipatory steps against the potential problem of hypothermia were designed through interventions focusing on maintaining warmth and providing adequate nutrition. The implementation of independent midwifery management by the midwife comprising the promotion of exclusive breastfeeding, education on a healthy smoke-free environment, and the application of Kangaroo Mother Care (KMC) proved highly effective without any indications of emergencies requiring collaborative actions or medical referrals. Final evaluation outcomes at the day 21 visit demonstrated successful care delivery, characterized by the achievement of vital signs stability, the prevention of hypothermic complications, and progressive neonatal weight gain reaching 2,610 grams. A limitation identified in this case study was the duration of home visit monitoring, which was restricted to the first 21 days of neonatal life; therefore, it is recommended that the UPTD Mawasangka Tengah Public Health Center optimize follow-up monitoring programs to maintain post-LBW infant growth and development at the community level.

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