

NEWBORN MIDWIFERY CARE FOR BABY Mrs. "M" WITH LOW BIRTH WEIGHT BABY AT PUSKESMAS WOLIO BAUBAU CITY

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A B S T R A C T

Background: Low Birth Weight Infants (LBW) are a serious health concern due to a higher risk of mortality in the first 28 days of life. According to WHO (2019), LBW is a baby with a birth weight of less than 2500 grams. LBW babies are at high risk of stunting, decreased intellectual ability, and other health **problems** that threaten the quality of human resources in the future. **Objective:** This study aims to provide effective midwifery care for newborns with LBW at Puskesmas Wolio in 2024. **Methodology:** This study used Varney's 7-step approach and SOAP to handle LBW cases at Puskesmas Wolio and direct observation of the results. **Results:** The management of Mrs. "M" with LBW included temperature monitoring, nutrition, routine weighing, infection prevention, and breastfeeding counseling. There were no significant obstacles during the study. The baby's weight increased from 2300 grams to 2550 grams, with normal vital signs. **Conclusion and Suggestion:** Midwifery care with Varney's 7-step approach and SOAP for baby Mrs. "M" with LBW at Puskesmas Wolio showed positive results. The problem solving process is well done, and there is no gap between theory and case. This study proves the effectiveness of midwifery care and can be a reference for other health workers.

INTRODUCTION

Low birth weight (LBW) is defined as a baby weighing less than 2500 grams at birth, regardless of gestational age. LBW is caused by prematurity (gestational age <37 weeks), stunted fetal growth (PJT), or a combination of both (Sinulingga et al., 2021). (Sinulingga et al., 2021)

Low birth weight (LBW) is one of the major health problems in many developing countries, including Indonesia. WHO (World Health Organization) defines LBW as a baby born weighing less than 2500 grams regardless of gestational age (Inang, 2020). The prevalence of LBW in Indonesia is very high, reaching more than 15.5% annually, making Indonesia one of the countries with the highest incidence of LBW in the world (Indrayani & Okrianti, 2023). The high incidence of LBW is closely related to various risk factors and has a significant impact on infant health, including an increased risk of neonatal mortality.

However, according to data published by the United Nations Children's Fund (2019), nearly three out of ten school-aged children

Growth retardation is found globally in children under the age of five, and one in five primary school children have developmental disorders due to obesity. In Indonesia, IDAI (2019) estimates that 5-6% of children have impaired development of coordination and motor skills, and as many as 15% of primary school children have the same developmental disorders. Southeast Sulawesi has an Early Childhood Development Index (ECDI) value of only 89.79%, which means that more than 10 percent of early childhood children are still not developing according to their age, even the literacy and numeracy skills of children aged 3-4 years are only 54.75 percent. This fact is also supported by research findings (Sundayana et al. (Ernawati et al., 2022).

Data from Indrayani and Okrianti (2023) showed an increase in the prevalence of LBW from 5.4% in 2007 to 5.7% in 2018, and reaching 6.2% in 2022 according to Perwitasari and Wijayanti (2022). Some of the major risk factors contributing to the high incidence of LBW in Indonesia include maternal nutritional deficiencies, extreme maternal age (<20 years or >35 years), close spacing of pregnancies, and low socioeconomic and educational status. ((Novitasari et al., 2022).

Infants born with LBW are at high risk of various health complications such as immunological immaturity, breathing difficulties, gastrointestinal abnormalities, and impaired cognitive development

(Azman, 2020). In addition, LBW is also closely related to high perinatal and neonatal mortality rates (Maria & Fibriana, 2023)

This study offers a comprehensive review of the prevalence, risk factors and impact of LBW in Indonesia, with a particular focus on local data from Baubau City. It also presents appropriate midwifery care strategies for managing LBW infants, which is expected to improve infant quality of life and reduce neonatal mortality.

This preliminary study was conducted by collecting secondary data from various credible literature sources and primary data from Puskesmas Wolio, Baubau City. The data collected included the prevalence of LBW, risk factors, and health impacts experienced by LBW infants. Data analysis was conducted to identify significant patterns and trends.

According to the Indonesian Demographic and Health Survey (IDHS), the leading cause of infant mortality is LBW, with a mortality rate of 34 per 1000 live births. Infants born weighing less than 2500 grams or less than 37 weeks of gestation require special care to maintain normal body temperature, such as heat exposure and the use of incubators. (Khusnul Dwihestie et al., 2022)

Factors that contribute to the high infant mortality rate due to LBW include maternal nutritional deficiencies, maternal age (<20 years or >35 years), too close a distance between pregnancies, education level, socioeconomic status, and employment (Novitasari et al., 2020). Infants born with LBW are at risk of slow cognitive development compared to normal birth weight infants, influenced by factors such as prematurity and Fetal Growth Retardation (PJT), as well as aspects of the mother, placenta, fetus, and environment that affect nutritional fulfillment during pregnancy. (Siregar, 2020)

Complications that can arise in infants with LBW include health problems such as immunological immaturity, respiratory difficulties, gastrointestinal and nutritional abnormalities, as well as neurological, cardiovascular, and metabolic problems (Azman, 2020). Perinatal and neonatal mortality is often closely related to the incidence of LBW, especially in infants less than one month old, due to disorders during the perinatal period (Noviati et al., 2023).

Based on data from the Baubau City Health Office in 2023, the infant mortality rate (IMR) was recorded at 7.8 per 1000 live births. revealed that the total maternal mortality rate (MMR) reached 2,536 per 100,000 live births, while the infant mortality rate (IMR) reached 7.5 per 1000 live births. The data also shows an infant mortality rate (IMR) of 7.5 per 1000 live births. In addition, Puskesmas Wolio Kota Baubau recorded that out of 287 births in 2022, there were 3 babies born with Low Birth Weight (LBW). Follow-up observations in 2023 to 2024 showed that only 1 baby was recorded as LBW. (Pujianti & Mulyawan, 2023)..

Based on the Performance Report of the Malang District Health Office in 2022, the Maternal Mortality Rate (MMR) was 55.47/100,000 KH and the Infant Mortality Rate (IMR) was 1.83/1,000 KH. The high MMR and IMR in Malang District have been strategic issues in all development periods. To address this issue, the Malang District Health Office has conducted several plans and activities, including the Facility Resource Capacity Improvement Plan, Health Work Plan, Health Resource Plan and Public Health Improvement Plan. One of the objectives of these plans and activities is to improve maternal and child health and reduce maternal and infant mortality rates. (Rosyidatuzzahro Anisykurlillah & Patriani Wilma Eunike Supit, 2023)

Based on the description above, the author is interested in discussing specifically about this problem, using the midwifery care management approach method with the title "Midwifery Care of Newborn Babies with Low Birth Weight Babies in Baby Mrs. "M" at Puskesmas Wolio Baubau City)". This study is expected to contribute to improving the quality of midwifery care for newborns with low birth weight at Puskesmas Wolio, as well as potentially reducing infant mortality and improving their quality of life.

METHODS

This research uses a descriptive method with a case study approach. Case study is a process of investigation or in-depth and detailed examination of a particular event or situation. Midwifery management is a method of logical and systematic thinking process in providing care that can be used as a method for making client-focused decisions. Case study is to focus intensively on a particular object by studying it as a case. The documentation method that the author uses is in the form of SOAP. This method includes subjective assessment, objective assessment.

Subjective data menggamba Midwifery management is a method of logical and systematic thinking process in providing care that can be used as a method for making client-focused decisions. Case study is to focus intensively on a particular object by studying it as a case. documentation whose

data can be obtained from the results of anamnesa on Mrs.M or through interviews. Objective data describes the documentation obtained from the results of physical examination and client observation. Analysis identifies a problem/diagnosis from the results of subjective and objective data that has been obtained. Management describes a comprehensive plan of action that has been determined by referring to the results of the previous steps that can be anticipated and perform the required care.

RESULTS & DISCUSSION

Subjective Data

Subjective data showed that the mother was pregnant for the second time and had never had a miscarriage. The mother's last period was on May 15, 2023 and the mother received one TT injection during her pregnancy. The mother gave birth normally on February 2, 2024 at 0216 hours. The family was very satisfied with the delivery process.

Baseline data was found for a baby girl 'M', born on February 2, 2024, weighing 2,300 grams and 47 cm long. The baby's parents are 'M' (27 years old) and 'A' (29 years old), of Voudoun ethnicity, Muslims, and high school graduates. 'M' is a housewife and 'A' is a casual laborer.

The chief complaint from the neonatal examination was that on February 2, 2024, baby M weighed less than 2,300 grams.

According to her pregnancy history, this was her second child, there was no history of miscarriage and the baby was born on February 22, 2024, at 37 weeks 3 days gestation. During her pregnancy, Mrs. M had a prenatal check-up at the nearest health center, had four antenatal check-ups, received a TT vaccination on January 2, 2024 and took iron tablets.

The baby was born on February 1, 2024 at the General Hospital in the normal occipital position, cried immediately after birth, had an Apgar score of 8/10 and was vaccinated with vitamin K and HB-0 vaccine. The baby is currently well nourished and breastfed, and although the baby is not bathed, her skin hygiene is well maintained. The infant's general condition is good and vital signs **are within** normal limits.

The girl's basic needs are well met. Breastfeeding is regular and feeding and swallowing reflexes are good. Although the baby is not bathed, her skin is clean and rosy and her clothes are changed as necessary to maintain hygiene. In addition, physical measurements and vital signs of the baby are taken regularly to ensure optimal development and health.

Objective Data

Objective data shows that the baby was born on February 2, 2024 at 02.16 WITA .

Examination of the baby revealed that the baby girl had a good general condition and compositional consciousness. Anthropometric measurements showed a body weight of 2400 grams, body length of 47 cm, head circumference of 30 cm, chest circumference of 29 cm, and abdominal circumference of 29 cm, with an Apgar score of 10/10. Vital signs showed a heart rate (DJB) of 140 x/min, respiration (P) of 45 x/min, and temperature (S) of 36.5°C. Physically, the baby's hair was thin and black, the skin was clear with clear head sutura. There were no lumps or edema on the face, eyes were symmetrical with pink conjunctiva and sclera not icteric, and no discharge. The nose is symmetrical without discharge or polyps, the mouth is clean with pink gums and the tongue appears clean, normal suction and swallowing reflexes. Ears are symmetrical with no accumulation of cerumen, neck with good muscle tone and no glandular enlargement. The chest is moving normally with nipples formed, the umbilical cord is still wet and in a pinched and clean state. The shoulders and arms are symmetrical with good grasping reflexes. External genitalia are normal for a female infant with symmetrical skin and limbs, complete fingers with no fractures, and skin appears pink with no birthmarks or abrasions. All neural reflexes including moro, rooting, sucking, swallowing and grasp were positive.

The baby's skin appears pink and clear, with no visible wounds or birthmarks. The infant's nervous system shows all reflexes such as moro, rooting, sucking, swallowing and grasp are normal. The baby appeared active with responsive movements, cried vigorously at birth, and good suction and swallowing reflexes indicating optimal physiological response. Infants also receive routine physical examinations that include regular anthropometric measurements and evaluation of vital signs to ensure stable health and normal development.

Analysis

Mrs. "M" 5 days old, born at full term according to gestational age, hind-head presentation, vaginally with low birth weight.

Management

On February 2, 2024 at 12:30 pm, an evaluation and intervention was carried out on the baby and provided education to the mother. As a result, the mother understood the information provided and looked happy. Observation of vital signs showed that the infant's heart rate (DJB) was 140x/min, pulse rate (P) 45x/min, and body temperature (S) 36.6°C, all within normal limits. Early initiation of breastfeeding (IMD) was done and the mother followed the advice to exclusively breastfeed and consume nutritious food. Changing the baby's diaper or clothes every time the baby defecated or urinated or got wet was done, and the mother also kept the baby's umbilical cord clean and covered the baby with clean and dry clothes. The mother has been informed about the danger signs that the baby should look out for, and she understands and recognizes these signs.

Table. APGAR SCORE in Newborns

No.	SIGN	VALUE			NUMBERS	
		0	1	2		
1.	A Appearance	Pale, blue	Red body bluish extremities	Full body redness	2	2
2.	P: Pulse	None	<100x/minute	>100x/minute	2	2
3.	G: Grimace	None	Crying	Clear/cough	1	2
4.	A: Activity	Response Weak	Little movement	Active movement	1	2
5.	R: Respiration	None	Slowly	Strong crying	2	2
	Total				8	10

Source: Primary Data, 2023

DISCUSSION

Subjective Data

Subjective data showed that this was the mother's 2nd pregnancy with no previous miscarriages. The mother last menstruated on May 15, 2023 and during this pregnancy, the mother received TT injection once. At delivery on February 2, 2024 at 02.16 WITA, the delivery took place normally and the mother and family were very happy with the birth of their baby. Overall data collection in the context of midwifery care for baby Mrs. "M", who experienced normal labor at Baubau Hospital in 2024. The data collection process is a crucial stage in determining appropriate and comprehensive interventions for infant care.

At this stage, baseline data collected includes anthropometric information of the infant such as weight, length, head circumference, and chest circumference. In addition, vital signs such as body temperature, pulse frequency, and respiration are measured. This data is obtained through careful physical examination and direct observation of the baby's condition. (Darmawathi, 2020)

Baseline data collected included information about a low birth weight (LBW) baby, with a birth weight of 2300 grams at 37 weeks and 3 days gestation. Objective examination included various anthropometric parameters and vital signs such as body temperature, pulse and respiration (This data was obtained through careful physical examination and direct observation of the baby's condition.

The data collected on Mrs. "M"'s baby is in line with the theoretical concept of identifying low birth weight babies (LBW), where babies with a birth weight of less than 2500 grams are included in the LBW category. Determination of this condition is important as it plays a role in determining the type of care required and the health risks the baby may face.

Once data collection is done, interpretation of basic data is the next step in the midwifery care process. Anthropometric data such as weight, length, head circumference, and chest circumference, as well as vital data such as body temperature, pulse, and respiration, are evaluated to determine the

infant's health condition in greater depth Careful interpretation allows for the identification of possible problems or potential complications to watch out for, such as hypothermia or respiratory problems.

In this context, the interpretation of baseline data in Mrs. "M's" infant reflects the application of the theory on measurement and evaluation of newborn health. Theory views the importance of accurate measurement to ensure that the infant's condition is thoroughly understood, which is evident in the data found in this case. The concordance between theory and practice in the interpretation of baseline data confirms that comprehensive and accurate data collection enables health practitioners to make appropriate diagnoses and plan appropriate interventions to ensure the infant receives optimal care according to his or her medical needs. This confirms the importance of congruence between clinical practice and theoretical foundation in improving the quality of newborn health care.

In the theoretical review, the determination of the gestational period is an important factor to determine whether the pregnancy is full-term or beyond. This is closely related to the level of fetal morbidity. Gynecologically, pregnancy is said to be mature or at term when it reaches 37-42 weeks, seen from the assessment of the date of the first day of the last menstrual period (HPHT). Babies are said to be at term (SMK) if the birth weight and gestational age match.

In theory, the gestational age considered sufficient is between 39 to 40 weeks. If a baby is born at 37 - 38 weeks gestation, it is considered to be born prematurely. Conversely, babies born at more than 40 weeks are considered to be born postmaturely. Based on this concept, Mrs. "M" baby who was born at 37 weeks and 3 days of gestation was included in the aterm pregnancy category, but with a birth weight of 2300 grams, Mrs. "M" baby was diagnosed with low birth weight (LBW). (Nur Cory'ah et al., 2023)

The diagnosis of a full-term baby (BCB) refers to the theoretical concept that a full-term baby is a baby born with a gestational age of 37-42 weeks (259-293 days). So, this diagnosis is in accordance with the existing data, namely when calculated from HPHT until Mrs. "M"'s baby was born on 13-01-2023. With a body weight of 2300 grams which is less than 2500 grams, Mrs. "M"'s baby was diagnosed as LBW.

Based on the application of theory and midwifery care management in the case of Mrs. "M", there are clear similarities and no gaps between theory and practice. Based on the diagnosis data of the case of Mrs. "M", the baby was born with low birth weight in accordance with the theory which states that babies with a birth weight of less than 2500 grams are included in the LBW category.

Thus, the application of theory in the practice of midwifery care in Mrs. "M"'s baby showed significant conformity. This confirms that identification of actual problems and appropriate diagnoses based on medical theory are essential to determine appropriate and thorough interventions for the care of infants

Objective Data

Objective data showed that the baby was born on February 2, 2024 at 02.16 WITA through Normal delivery with rear presentation of the head. The baby weighed 2550 grams, body length 49 cm, and head circumference 31 cm. Physical examination showed good general condition with Apgar score 10/10, and good suction and swallowing reflexes. There was no sign of infection on the skin and the umbilical cord was clean. The baby had defecated and urinated after birth.

One of the potential problems often encountered in LBW infants is hypothermia. Hypothermia is defined as a state of body temperature below 36.5°C. (RI, 2020; Sisy Rizkia, 2020) Hypothermia commonly occurs in LBW infants because they have very thin fat tissue that fails to produce adequate heat. In addition, body temperature regulation in infants is immature, and they experience significant heat loss due to the relatively larger body surface compared to their body weight.

During home visits, the potential for hypothermia should be anticipated. This is important because LBW babies are very vulnerable to a decrease in body temperature. Based on the data obtained from the assessment of Mrs. "M"'s baby, the diagnosis showed a body temperature of 36.6°C. Although this is still within normal limits, we must still be aware of the potential for hypothermia that may occur.

The results of research conducted by(Isnaeni & Maya, 2014) about the Effect of Early Breastfeeding Initiation on the Incidence of Hypothermia at the Summersari Health Center, Jember Regency showed that the incidence of mild hypothermia was higher, which was 35.29%, compared to the incidence of moderate hypothermia of 14.71% and severe hypothermia of 8.82%. This shows that LBW babies are very vulnerable to hypothermia, especially if the initial treatment is not done properly.

In the context of Mrs. "M's" baby, the identification of the potential problem of hypothermia is very relevant. Hypothermia can be prevented by various interventions, such as keeping the baby warm through skin-to-skin contact, use of an incubator, and adequate clothing and blankets. Awareness and anticipation of this potential problem is essential in obstetric management to ensure the baby receives optimal care.

Based on the application of theory and midwifery care management in the case of Mrs. "M", there is a clear correspondence between theory and practice. The identification of potential problems such as hypothermia is in accordance with medical theory which states that LBW infants are susceptible to decreased body temperature. Thus, the application of theory in the practice of midwifery care in the case of Mrs. "M" showed a significant correspondence between theory and practice.

Analysis

Baby Mrs. "M" 10 days old, with Normal Baby Weight

Management

At 3:35 pm on February 12, 2024, the baby's vital signs were within normal limits: heart rate (DJB) 150 beats per minute, pulse (P) 44 beats per minute, and temperature (S) 36.5°C. Mothers changed the baby's diapers and clothes every time the baby urinated or defecated or wet the bed. Mothers were also willing to put clean and dry clothes on their children. In addition, mothers were told to immunize their infants and they understood and were willing to follow the advice.

According to the Midwifery Care Management Review, the implementation of the action plan must be efficient and ensure patient safety. The implementation of midwifery care can be carried out entirely by midwives, partly by birth mothers, or in collaboration with other health teams according to planned actions. (Ismayanah et al., 2020)

In the case of baby M, the delivery care plan included several key actions. First, the infant was allowed to breastfeed as desired, while her fluid intake and weight gain were monitored to assess the effectiveness of breastfeeding in improving infant growth and development. (Herliana & Cahyati, 2019) . Second, the kangaroo method, in which the baby is placed on the mother's chest and mother and baby have direct skin-to-skin contact. This method is especially important for babies with low birth weight (LBW) or premature babies (weighing less than 2500 grams or less than 37 weeks). Low birth weight babies and premature babies have rudimentary adipose tissue, which makes thermoregulation less than ideal. (Gemilastari et al.)

At the first medical examination, baby M was weighed. The baby's weight increased from 2,300 to 2,400 grams. During this visit, the mother was counseled and instructed to maintain and preserve the baby's body temperature. The mother was also explained about the importance of breastfeeding on demand and the correct way of breastfeeding and advised to use the kangaroo care method in case of hypothermia.

On the tenth day of the last monitoring, baby M's weight was weighed and increased by 2,550 grams. Although the baby's weight increased, counseling and guidance were still given to mothers about the importance of exclusive breastfeeding, personal hygiene of the mother and baby, swaddling the baby to maintain the baby's body temperature, and washing hands before touching the baby. The mothers were aware and willing to receive counseling.

The midwifery care given to baby M showed consistency between theory and practice. The care provided was in accordance with the theory of midwifery care management, which emphasizes efficiency, patient safety and health teamwork. This confirms that the midwifery care used was in accordance with the existing literature review and was successful in improving the baby's health.

CONCLUSION

After performing midwifery care on Baby Mrs. "M" who was born with low birth weight (LBW), a 7-step Varney midwifery management approach was applied. The initial assessment identified that baby Mrs. "M" was born weighing less than 2300 grams, in accordance with the first step in Varney's management which emphasizes the importance of collecting basic data for further analysis (Mangkuji, 2017).

The actual diagnosis and problem identified in Mrs. "M"'s baby was LBW, which was then proven by the diagnostic results at the age of 5 days after birth. This step is important to ensure proper treatment according to the baby's condition (Herliana, 2019).

At the stage of identifying potential problems, the midwifery care provided to Mrs. "M"'s baby predicted the possibility of hypothermia. However, through intensive monitoring for 10 days, no indications of hypothermia or other potential problems were found, indicating the effectiveness of the preventive measures that had been implemented (Indonesian Ministry of Health, 2020).

Immediate action or collaboration with other health professionals was not required in the case of Mrs. "M", as the thorough evaluation did not identify any emergencies or symptoms that required further intervention. This confirms that Varney's management process has facilitated appropriate care in LBW infants (Mangkuj, 2017).

The comprehensive midwifery care of Mrs. "M"'s baby involved the application of the kangaroo method and exclusive breastfeeding. This approach not only helps maintain the baby's body temperature, especially in LBW babies, but also provides optimal nutrition that is essential for the baby's growth and development (Herliana, 2019).

The final evaluation of midwifery care provided to Mrs. "M"'s baby showed good results, with the baby's general condition within normal limits, compos mentis consciousness, and stable vital signs. The anthropometric results of the baby also showed an increase in weight in accordance with expectations, reflecting the success of the implementation of structured and comprehensive midwifery care management (Ismayanah et al., 2020).

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