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The Influence of Low Birth Weight Infant Care on Child Development in the Working Area of East Langsa Health Center, East Langsa District Langsa City, Aceh Province in 2023

Juliana Munthe [1 *], Henny Rista [2], Mastaida Tambun [3], Husmika Sari [4], Diah Wahyu Ningsih [5], Rosmega Pakpahan [6], Indra Manurung [7]
[1 -7] Mitra Husada College of Health Sciences (STIKes) Medan, Indonesia

Address: Jl. Jl. Ps. VIII No.Kel, Kwala Bekala, Medan Johor District, Medan City.
Author correspondence: munthejuliana1986@gmail.com *

Abstract *. Low Birth Weight (LBW) infants are at high risk for complications and are one of the leading causes of infant mortality in Indonesia, including in Aceh Province, where infant mortality rates are significant. This study aims to analyze the impact of LBW infant care on child development in the working area of Langsa Timur Health Center, Langsa Timur District, Langsa City, Aceh Province, in 2023. The research used a qualitative approach, conducting interviews with mothers and infants with a history of LBW. Data analysis was performed descriptively using univariate analysis to identify the characteristics of mothers and infants, as well as child development. The results showed that the majority of mothers (80%) were under 35 years old, had secondary education (100%), and were housewives (100%). The majority of infants were female (60%), and most had appropriate development (60%). The majority of infants had a history of LBW (60%). The findings suggest that appropriate care for LBW infants plays a crucial role in supporting child development and is expected to contribute to efforts to reduce LBW rates and infant mortality in the region, as well as improving the quality of maternal and child healthcare services.*

Keywords *: Low Birth Weight (LBW) Infants, Child Development, Infant Care, Langsa Timur Health Center, Aceh Province.*

Abstract . Low Birth Weight (LBW) babies have a high risk of complications and are one of the causes of infant mortality in Indonesia, including in Aceh Province, with a significant infant mortality rate. This study aims to analyze the effect of LBW baby care on child development in the working area of the Langsa Timur Health Center, Langsa Timur District, Langsa City, Aceh Province, in 2023. The method used is a qualitative approach by interviewing mothers and babies who have a history of LBW. Data analysis was carried out descriptively univariate to identify the characteristics of mothers and babies and child development. The results showed that the majority of mothers (80%) were under 35 years old, had secondary education (100%), and worked as housewives (100%). The gender of the baby was mostly female (60%), with the majority of development being appropriate (60%). Most babies had a history of LBW (60%). These findings indicate that good care for LBW babies plays an important role in supporting child development and is expected to contribute to efforts to reduce LBW and infant mortality rates in the region, as well as improve the quality of maternal and child health services.

Keywords : Low Birth Weight (LBW) Babies, Child Development, Baby Care, East Langsa Health Center, Aceh Province.

1. BACKGROUND

Low Birth Weight (LBW) is a baby born weighing less than 2500 grams, regardless of gestational age. The weight measured one hour after birth is called birth weight. Babies with LBW are at greater risk of complications. The incidence of LBW in Indonesia varies between 9% and 30%, with the SDKI analysis showing a prevalence of 7.5%. This figure is still considered high, especially in the efforts towards Healthy Indonesia 2030 which targets a reduction in LBW rates. In Aceh Province, 1,558 cases of infant mortality were recorded, with

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832 cases caused by LBW, an increase of 18% compared to the previous year. In 2020, the three districts with the highest infant mortality rates were Aceh Besar (72 per 1000 live births), Pidie (45 per 1000 live births), and Bireun (43 per 1000 live births), with the main cause being LBW.

Achieving the Sustainable Development Goals (SDGs) in the health sector, especially reducing the Infant Mortality Rate (IMR), requires greater efforts. Indonesia is recorded to have an IMR of 23 per 1000 live births (Dinas Kesehatan DI Yogyakarta, 2015). Globally, LBW is a significant public health problem, with long-term impacts that increase the risk of non-communicable diseases, such as diabetes and cardiovascular disease. The World Health Assembly in 2012 targeted a 30% reduction in LBW cases by 2025, as stated in the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition (WHO, 2014).

Efforts to reduce infant mortality require proper and trained LBW care, including the use of incubators. However, this care is expensive and can hinder the emotional bond between mother and baby, which affects the mother's confidence in caring for her baby. The kangaroo method, which involves consistent skin-to-skin contact between mother and baby, has been shown to have a positive impact on infant development (Setiawati & Rini, 2016). The government has launched a policy to reduce the number of LBW, which in 2019 was the main cause of infant death with 20,244 cases (35.3%) (Ministry of Health of the Republic of Indonesia, 2020). In LBW babies who are born without complications, there is a possibility that they will still experience growth and development disorders, even with proper care (Ministry of Health of the Republic of Indonesia, 2020). LBW babies can experience activity discrepancies at preschool age, such as gross, fine, and cognitive motor development (Aoyama, 2017).

Infection is also one of the causes of health problems in infants, one of which is diarrhea, which is caused by rotavirus and is at risk of causing dehydration. In developing countries, diarrhea is the leading cause of death in infants and toddlers (Sumampow, 2017). Developmental disorders in children can be seen in five aspects, namely gross motor skills, fine motor skills, language, social, and independence (Mutmainah, 2018). According to WHO data (2014), around 200 million infants and toddlers experience gross and fine motor disorders, while 16% experience other developmental disorders, such as hearing disorders and speech delays. In Indonesia, in 2016, 11.5% of toddlers experienced growth and developmental disorders (Ministry of Health of the Republic of Indonesia, 2016). These developmental

disorders can have an impact on morbidity, intergenerational poverty, and hinder national development (Susenas and Riskesdas, 2018).

In Indonesia, the incidence of stunting in toddlers was recorded at 37.2% in 2013, with the number of children experiencing stunting reaching 101 million, while globally, 165 million children experienced the same thing. These data show an increase in the prevalence of stunting from 2007 to 2013, indicating that health problems related to nutrition in children are still a major challenge. Language, fine motor, and gross motor development disorders are disorders that are often found in toddlers in Indonesia, with language disorders being the most common (13.8%) (Ministry of Health of the Republic of Indonesia, 2016).

A preliminary survey conducted in the Langsa Timur Health Center Work Area in 2023 showed that out of 20 babies born with a history of LBW in 2022, 8 babies were still alive and 12 babies died. Of the 8 babies who lived, 2 of them experienced developmental disorders, especially in the realm of independence, namely the child did not want to join peers when playing. Based on these findings, researchers are interested in studying in more depth the effect of LBW baby care on child development in the area, with the research title "The Effect of Low Birth Weight Baby Care on Child Development in the Langsa Timur Health Center Work Area, Langsa Timur District, Langsa City, Aceh Province in 2023.

2. THEORETICAL STUDY

Low Birth Weight (LBW) Babies

Definition and Concept

Low birth weight (LBW) babies are at risk of experiencing developmental and growth disorders as adults. Several studies have shown a relationship between the incidence of LBW and infant morbidity and mortality. In the first year of life, babies weighing less than 2000 grams have a chance of surviving to six months of age, but two-thirds of them tend to die, are susceptible to disease, and have difficulty in healing. In addition, intellectual disabilities can be a problem. The distinction between LBW caused by prematurity and pregnancy disorders is very important. Babies who are born prematurely but with LBW can have better development compared to babies who experience disorders during pregnancy.

Criteria

Low Birth Weight Babies can be categorized as follows:

1. A baby with a gestational age according to the last menstrual period but born with low weight.

2. A baby with a small size for gestational age (SGA), where the baby's weight is below the 10th percentile of the weight that should be achieved according to gestational age.
3. Babies with a gestational age of less than 37 weeks who experience disorders in intrauterine growth.

Characteristics of LBW

The physical characteristics of babies with LBW can be divided into two categories:

1. Small for Gestational Age (SGA) or Small for Gestational Age (KMK).
2. Babies with a gestational age of less than 37 weeks, which is in accordance with the gestational age standard (SMK).

Impact of LBW on Development

Low Birth Weight babies often show discrepancies in gross, fine, and cognitive motor activities at preschool age (Aoyama, 2017). In 2019, LBW was the leading cause of infant mortality, accounting for 35.3% of total infant deaths (Indonesian Ministry of Health, 2020). Although babies born without complications are still at risk of impaired growth and development, proper care can help babies catch up on development according to their age. Babies with LBW require resuscitation, antibiotics, and care to prevent infection, and may have lower development scores in certain domains. A healthy pregnancy and good neonatal care have a major impact on a child's future development (Rocha et al., 2021).

Causes of LBW

Several factors that cause LBW that have been studied include pregnant women with poor nutritional status (KEK) who have a risk of 39%. Lack of hemoglobin in pregnant women as gestational age increases causes decreased oxygen to the placenta, which can result in asphyxia in babies (Kalaviani, 2009). Other predisposing factors include mothers with a history of certain diseases such as preeclampsia. In addition, mothers who work full time are also at risk of having children with growth and development disorders, due to limited interaction between parents and children, which can hinder child development (Handoyo, 2020).

Development

Child development can be analyzed in five main aspects: gross motor, fine motor, social, language, and independence. Gross motor development involves movements involving large muscles, such as walking and running, while fine motor development involves movements involving small muscles, such as grasping and turning the head. Social development includes

the ability to interact with peers and people around them, while independence involves the child's ability to carry out daily activities without the help of others (Mutmainah, 2018).

Regulation of the Minister of National Education of the Republic of Indonesia Number 58 of 2009 concerning Early Childhood Education Standards states that children's cognitive development must be stimulated from an early age. This can be seen in the child's ability to recognize general knowledge, patterns, shapes, colors, and numbers, which develop as the child gets older. Language and motor development are also important, with proper stimulation at home and school.

How to Assess Child Development

Child development monitoring is carried out periodically and regularly by parents, health workers, and the community. One of the methods used is the Pre-Screening Development Questionnaire (KPSP), which can measure child development from an early age. KPSP is used to monitor the development of gross, fine, social, language, and independence motor skills of children, and is carried out at certain age intervals ranging from 3 months to 72 months.

Research Hypothesis

Ha: There is an influence of low birth weight (LBW) infant care on child development in the working area of the Langsa Timur Health Center, Langsa Timur District, Langsa City, Aceh Province in 2023.

Ho: There is no effect of low birth weight (LBW) infant care on child development in the working area of the Langsa Timur Health Center, Langsa Timur District, Langsa City, Aceh Province in 2023.

3. RESEARCH METHODS

This research design uses an observational/survey method with a qualitative descriptive research design. The study population consisted of mothers and infants with a history of LBW in the Langsa Timur Health Center Working Area, and samples were taken from the entire population of 5 people. Data were collected through questionnaires given to respondents, with instruments that had been tested previously. Primary data were obtained directly from respondents, while secondary data were taken from literature studies and related sources. Data processing was carried out with the stages of editing, coding, entry, and cleaning. Data analysis was carried out descriptively with a frequency table to describe the characteristics of the respondents. The writing of statistical tests refers to relevant references, and the results of the validity and reliability tests of the instruments are presented in general with their interpretations

4. RESULTS AND DISCUSSION

Results

1. Univariate Analysis

Table 1 Frequency Distribution of Mothers' Characteristics in the Sinunukan Health Center Working Area, Mandailing Natal Regency, North Sumatra Province North 2023

No	Category Age	Frequency	Percentage
1	<12 months	4	80
2	>12 months	1	20
Amount		**5**	**100**

No.	Education		
1	Base	0	0
2	Intermediate	5	100
3	Tall	0	0
	Amount	**5**	**100**

No	Work		
1	housewife	5	100
2	Private	0	0
3	Self-employed	0	0
4	Employee	0	0
5	Farmer	0	0
6	Laborer	0	0

No.	Number of children	5	100
1	≤ 1 person	2	40
2	>1 person	3	60
	Amount	**30**	**100**

Based on the results of the analysis of table 1 above, the majority of mothers aged < 35 years were 4 people (80%) and the minority of mothers aged > 35 years were 1 person (20%). In terms of education, the majority were secondary education, 5 people (100%). In terms of employment, the majority were housewives, 5 people (100%) and in terms of the number of children, the majority were >1 person, 3 people (60%) and the minority were ≤1 2 people (40%).

Table 2 Frequency Distribution of Children's Characteristics in the Sinunukan Health Center Working Area, Mandailing Natal Regency, North Sumatra Province in 2023

No	Category	Frequency	Percentage
	Gender		
1	Man	2	40
2	Woman	3	60
Amount		**5**	**100**

No.	Development		
1	In accordance	3	60
2	Doubtful	2	40
3	Deviation	0	0
	Amount	**5**	**100**

No .	Types of LBW		
1	LBW	3	60
2	BBLSR	2	40
Amount		**5**	**100**

Based on the results of the analysis of table 2 above, the majority of the gender of the child is female, as many as 3 people (60%) and the minority of males as many as 2 people (40%). In terms of development, the majority are in accordance with as many as 3 people (60%) and the minority is doubtful as many as 2 people (40%). In terms of the type of LBW history, the majority of LBW are 3 people (60%) and the minority of LBW are 2 people (40%).

2. Low Birth Weight Baby Care

Question 1 : How do mothers provide nutrition to babies?

Based on the interview results, Mrs. A said that the baby was given meat, eggs and fruits, ate rice, drank milk sometimes ate rice. Mrs. C stated that the baby was given fish, tempeh, cow's milk, vegetables and meat. Mrs. E said by providing sufficient animal and vegetable protein such as eggs, tempeh tofu, milk, minerals, carbohydrates from rice or potatoes can also be, iron. Second, Mrs. M said to give meat, milk and fish to her baby.

Question 2 : How does the mother keep the baby warm?

The results of the interview with Mrs. A stated that before going to bed the baby was massaged first, Mrs. C said to massage the baby before going to bed, wear layered clothes, not too thick because later the child will be too hot, Mrs. E said to give eucalyptus oil, layered clothes, second Mrs. M said to apply telon oil usually when going to bed, give a blanket and massage the baby

Question 3 : How do mothers keep their babies clean?

The results of the interview with Mrs. A stated that the baby was bathed twice a day, changed clothes if wet, Mrs. C said to wash hands before holding the baby, change diapers if full, Mrs. E said to bathe, change clothes. Second, Mrs. M said to wash hands if you want to hold the baby, clean the clothes first, change them so they don't get dirty,

Question 4 : What does a mother do if her baby is sick?

The results of the interview with Mrs. A stated that if the child has a fever, the mother does not cover him or give him fever medicine at home, Mrs. C said that she usually gives baby paper first if the child is sick, then takes him to the midwife for a check-up and is given medicine and the mother panics if the baby is sick. Mrs. E said that she contacted the nearest midwife, to a pediatrician, if the child has a fever, I provide baby paper at home, then I stick it on, give him fever-reducing medicine like paracetamol, second Mrs. M said to add fluids, rice water, breast milk, then give him medicine, sometimes to the doctor

Question 5 : How do mothers stimulate their children's development?

The results of the interview with Mrs. A stated that the baby was taught to talk, write and count, Mrs. C said that she often invited the child to talk, crawl, stand, sit and talk now is still a little. Mrs. E said that she monitored and taught her by talking, watching her development, the baby could already sit, but could not stand yet. Second, Mrs. M said that she invited the child to talk, play, sing,

Discussion

Based on the results of the analysis of table 4.1 above, the majority of mothers' ages < 35 years are 4 people (80%) and the minority of mothers' ages> 35 years are 1 person (20%). In terms of education, the majority of secondary education is 5 people (100%). In terms of employment, the majority of housewives are 5 people (100%) and in terms of the number of children, the majority> 1 person is 3 people (60%) and the minority ≤1 is 2 people (40%). Based on the results of the analysis of table 4.2 above, the majority of female children are 3 people (60%) and the minority of males are 2 people (40%). In terms of development, the majority are in accordance with 3 people (60%) and the minority is doubtful as many as 2 people (40%). In terms of type of LBW history, the majority of LBW are 3 people (60%) and the minority of LBW are 2 people (40%).

Health Indicators Sustainable Development Goals (SDGs), one of the targets is the Infant Mortality Rate (IMR). The Infant Mortality Rate must be reduced by two-thirds by 2030 for all committed countries. Indonesia recorded 23 per 1000 live births of Infant Mortality.

The government needs to provide policies to reduce cases of Low Birth Weight (LBW) cases, in 2019 this was the main cause of infant mortality from 20,244 (35.3%). (Ministry of Health of the Republic of Indonesia, 2020)

Globally and significantly, LBW is a public health problem, because its effects can occur in the short and long term. In vulnerable population areas in Indonesia, the majority of LBW

cases are found. The impact of LBW in the future can increase the risk of non-communicable diseases or systemic diseases such as diabetes and cardiovascular, so it is not only a cause of infant mortality. The World Health Assembly in 2012 approved the target of 30% LBW reduction by 2025, this statement was ratified in the Comprehensive Implementation Plan on Maternal, Infant and Young Child Nutrition. (WHO, 2014)

Working mothers have a relationship with the condition of children experiencing growth and development disorders, work that demands a lot must be completed so that parents' time for children is limited, parent-child interactions are not of good quality, free time can be used to monitor children. Handoyo's research with IFLS 5 data (Indonesia Family Life Survey 5 in 2014 stated that the government needs to consider working hours for mothers who have babies to improve children's health in the future so that mother-child interactions can be of good quality and growth and development can be monitored properly (Handoyo, 2020)

According to the assumption of researchers, children with a history of LBW will have the potential for disrupted development, but this can be prevented by continuing to monitor development and health, providing adequate nutrition, maintaining warmth, dealing with illness immediately and maintaining cleanliness for better health with *excellent and professional service* and mothers continue to increase knowledge and insight about prevention and handling of LBW in mothers during pregnancy, and developmental stimulation. Monitoring the health and development of children provides an opportunity for children to develop well in accordance with their peers. The majority of children who have doubtful development are female. Women have soft hearts, if they are not stimulated properly from an early age, then children can grow late, especially those with a history of LBW.

5. CONCLUSION AND SUGGESTIONS

Conclusion

Based on the results of the study, the majority of mothers involved in this study were under 35 years old (80%) and had a secondary education level (100%). The majority of mothers' jobs were as housewives (100%), with the majority having more than one child (60%). In terms of gender, the majority of babies were female (60%), and the majority of children's development was in accordance with their age (60%). In addition, the majority of babies had a history of LBW (60%). The results of this study indicate that factors such as age, education, occupation, number of children, gender, and history of LBW affect the development of children with LBW in the Langsa Timur Health Center area.

Suggestion

For the Langsa Timur Health Center Work Area, it is recommended to increase counseling for mothers, especially those with toddlers, regarding the importance of caring for babies with a history of LBW so that the child's development is in accordance with their age. For the Institution, STIKes Mitra Husada Medan is expected to involve lecturers and students in collaboration with local health workers to provide professional midwifery care and increase empathy, reliability, and accountability in caring for LBW. For the community, especially mothers in the Langsa Timur Health Center Work Area, it is recommended to better understand the signs and care of LBW children and monitor their development by following health programs provided by local health facilities. In addition, it is also important to carry out prevention and pay more attention to children with a history of LBW .

REFERENCE LIST

Aswin, A., Amalia, & et al. (2019). The relationship between hemoglobin levels and febrile seizures in children caused by acute respiratory infections: A case-control study. *Sari Pediatri, 20* (5), February 2019.

Indonesian Pediatrician Association. (2016). Recommendations for the management of febrile seizures. *IDAI Neurology Coordination Work Unit.*

Kartika, DE, et al. (2019). Android-based child development pre-screening questionnaire application at Hompimpa Center Bengkalis. *Polinema Informatics Journal (JIP), 6* (1).

Ministry of Health of the Republic of Indonesia. (2016). *Guidelines for the implementation of stimulation, detection, and early intervention of child growth and development.*

Ministry of Health of the Republic of Indonesia. (2020). *Regulation of the Minister of Health of the Republic of Indonesia No. 320 of 2020 concerning Professional Standards for Midwives.*

Muh Daud, et al. (2021). *Textbook of child developmental psychology.* Jakarta: Kencana.

Nurdin, I., et al. (2019). *Social research methodology.* Surabaya: Media Sahabat Cendekia.

Pangesti, NA, et al. (2020). Application of warm compresses in reducing hyperthermia in children with simple febrile seizures. *Nursing Science Journal (NSJ), 1* (1), June 2020. https://doi.org/[if there is a DOI]

Zizlavvsky, S. (2019). Agenesis of corpus callosum: Its impact on child speech development. *Case report, Department of Otorhinolaryngology-Head and Neck Surgery, Faculty of Medicine, University of Indonesia/Dr. Cipto Mangunkusumo Hospital.*