

Cultural Aspects of Merarik Kodeq as Risk Factors for LBW Incidents

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ABSTRACT

Background: Low birth weight (LBW) remains a maternal and child health problem that contributes to increased neonatal mortality rates, including in West Lombok Regency. In addition to medical factors, sociocultural aspects such as merarik kodeq are thought to play a role as risk factors. This study aims to analyze the relationship between the cultural aspect of merarik kodeq and the incidence of LBW in the working areas of the Kediri and Banyumulek Community Health Centers in West Lombok Regency, West Nusa Tenggara Province.

Research Methods: This study used an analytical observational design with a case-control approach. A sample of 74 respondents was selected using simple random sampling, consisting of 37 case groups (LBW) and 37 control groups (non-LBW). Data were collected through interviews using a validated questionnaire and maternal and child health (MCH) records. Data analysis was performed using bivariate analysis with the chi-square test at a significance level of 0.05 and calculation of the odds ratio (OR).

Research Results: The results showed a significant relationship between gestational age at delivery and LBW ($p=0.001$; $OR=3.467$). In addition, there was a significant relationship between the mother's age at marriage (merarik kodeq) and LBW ($p=0.001$; $OR=6.481$). Mothers who married at <19 years of age had a greater risk of giving birth to LBW babies than those who married at the ideal age. Meanwhile, the mother's age at pregnancy did not show a significant relationship with LBW ($p>0.05$).

Conclusion: The cultural aspect of codeq is one of the risk factors for LBW in West Lombok Regency, West Nusa Tenggara Province.

BACKGROUND

LBW or Low Birth Weight is a condition in which a baby weighs less than 2500 grams at birth. LBW remains a global health problem associated with various consequences, both long-term and short-term. Data from the World Health Organization (WHO) states that 15% to 20% of all births worldwide are low birth weight, representing more than 20 million births per year (WHO, 2015). In Indonesia alone, in 2023, 84.3% of newborns were weighed. Of these 84.3% of newborns, 3.9% had LBW. This condition has increased significantly compared to 2022, where around 2.5% of babies had LBW (Kemenkes RI, 2024). Meanwhile, in West Lombok Regency itself, the percentage of LBW cases also increased in 2023 to 4.79%, from only 2.9% in 2022 (Dinas Kesehatan Kab. Lombok Barat, 2024; Dinas Kesehatan Kab. Lombok Barat, 2023). The number of infant deaths in West Lombok Regency, most of which were caused by LBW and prematurity, also increased. This is evidenced by the number of infant deaths, which reached 96 in 2023, an increase from 43 deaths in 2022 (Dinas Kesehatan Kab. Lombok Barat, 2024; Dinas Kesehatan Kab. Lombok Barat, 2023).

Several factors that can influence the occurrence of LBW include insufficient nutrient supply during pregnancy, anemia in pregnant women, pregnant women with chronic energy deficiency (CED), the number

of children born to the mother (maternal parity), the birth spacing between children, the mother's height, the mother being too young (<20 years), and the mother being too old (>35 years) (Ferinawati & Sari, 2020). Pregnancy at a very young age (< 20 years) is an impact of early marriage (Widyastuti & Azinar, 2021). Early marriage is a marriage between a couple who are still relatively young (Almahisa & Agustian, 2021). According to Law Number 16 of 2019 concerning Amendments to Law Number 1 of 1974 concerning marriage, the ideal age limit for marriage is when both the man and woman have reached the age of 19. Factors that can influence early marriage include low levels of knowledge, economics, and culture. The culture that believes that girls must be married off immediately to avoid promiscuity is one of the factors that encourage early marriage (Widyastuti & Azinar, 2021). This is also the case in the Sasak tribe. Underage marriage, commonly known as merarik kodeq, is not new to the Sasak tribe.

Merarik kodeq in the Sasak tribe is a marriage performed by a young man to an underage girl. Merarik kodeq performed by a young man must have the approval of the girl's parents. The process of merarik kodeq is basically the same as merarik performed by women and men of legal age. This tradition has become commonplace despite the negative consequences it causes. This is something that both men and women must consider and think twice about if they want to get married at a young age (Kusumawati, 2017).

The phenomenon of early marriage or merarik kodeq in West Lombok Regency, West Nusa Tenggara Province, is still quite high. The consequences are pregnancy and childbirth at a young age. This is evidenced by the fact that 16.23% of women aged 15-19 had given birth in 2022 ((BPS Provinsi Nusa Tenggara Barat, 2023). Meanwhile, in West Lombok Regency itself, 2.95% married for the first time at the age of <15 years and 53.42% married for the first time at the age of 15-19 years (BPS Kabupaten Lombok Barat, 2024). When compared to national data, 2.39% married for the first time at the age of <16 and 18.55% married for the first time at the age of 16-18 (Badan Pusat Statistik, 2024). This proves that the rate of early marriage in West Lombok Regency is almost 3 times higher than the national rate of early marriage. Based on this, the Governor of West Nusa Tenggara finally issued West Nusa Tenggara Provincial Regulation Number 5 of 2021 concerning the Prevention of Child Marriage. This regulation was created as an effort, action, and activity carried out by the local government, village government, community, families, parents, and all stakeholders in order to prevent child marriage and reduce the rate of child marriage in West Nusa Tenggara Province.

Based on the above explanation, the researcher is interested in conducting a study entitled "The cultural aspects of Merarik Kodeq as a risk factor for low birth weight in West Lombok Regency, West Nusa Tenggara Province."

RESEARCH METHODS

Data collection for this study was conducted after obtaining permission from the Kediri Community Health Center and the Banyumulek Community Health Center, Kediri District, West Lombok Regency, West Nusa Tenggara Province. Respondents were selected based on the data required for this study, which included the mother's name, the mother's age at marriage, the mother's age at pregnancy, the gestational age at delivery, and the baby's weight at birth. This research was conducted from November 2025 to January 2026, covering the stages of preparation, obtaining research permission, data analysis, and final results. Data collection was conducted from January 20 to 28, 2026. The data collection process began with the creation of research ethics and obtaining research permits. The next stage was the data analysis process, which took place in the first week of February 2026. The exclusion criteria for respondents were mothers who had multiple pregnancies and did not have complete pregnancy data.

This study used a case-control design with a sample consisting of 37 case groups (LBW) and 37 control groups (non-LBW). A simple random sampling method was used to select respondents. The Slovin formula was applied to calculate the sample size. Before the interview process, respondents were required to fill out a consent form to become research respondents. After that, the researchers interviewed the research respondents using a questionnaire that had been tested for validity. This study has undergone ethical review and is considered ethical with ethics approval number 0020/HRECC.FODM/I/2026, approved on January 14, 2026, by the Health Research Ethics Committee at the Faculty of Dentistry, Airlangga University, Surabaya. Data were analyzed using the Chi-square test with a significance level of 0.005. The analysis was performed using IBM SPSS Statistics 31 software.

RESULTS

Based on the research results, the answers from the interview process, such as the baby's weight at birth, the age of the pregnancy at delivery, the age of the mother during pregnancy, and the age of the mother at marriage, were processed using the IBM SPSS application. Each respondent underwent the procedure in accordance with the stages determined by the researcher, starting from filling out the consent form to the interview process. The data obtained from the interviews was used as a basis for analyzing the respondents' conditions and their relationship with other research variables. The following table presents the characteristics of the respondents' age during pregnancy:

Table 1. Respondents Age Characteristics During Pregnancy

Maternal Age during Pregnancy	Case		Control	
	n=37	%	n=37	%
< 20 years	6	16,2	1	2,7
20-35 years	31	83,8	36	97,3

“Source: Primary Data Processed, 2026”

The age characteristics of respondents during pregnancy are shown in Table 1. The data show that there were 6 respondents (16.2%) in the case group who were pregnant at <20 years of age, and 1 respondent (2.7%) in the control group who was pregnant at <20 years of age. Meanwhile, there were 31 respondents (83.8%) in the case group who were pregnant at the age of 20-35 years, and 36 respondents (97.3%) in the control group who were pregnant at the age of 20-35 years. Based on the data, it can be seen that most respondents were pregnant between the ages of 20-35. The data on the age of mothers during pregnancy is still descriptive and has not been statistically tested. Therefore, further analysis, such as bivariate analysis, is needed to determine whether age during pregnancy has a significant relationship with low birth weight (LBW).

Table 2. Bivariate Analysis: Maternal Age at Pregnancy and Birth Weight

Maternal Age during Pregnancy	Birth Weight				OR (95% CI)	p-value
	LBW		Not LBW			
	n=37	%	n=37	%		
< 20 years	6	16,2	1	2,7	6,968	0,107
20-35 years	31	83,8	36	97,3	(0,795-	
Total	37	100	37	100	61,074)	

“Source: Primary Data Processed, 2026”

The bivariate analysis shown in Table 2 shows the relationship between the mother's age during pregnancy and the child's birth weight. The test results show that the calculated value is greater than the α value (0.05), which means that there is no significant relationship between the mother's age during pregnancy and low birth weight (LBW). The odds ratio (OR) value obtained in the study was 6.968, which means that $OR > 1$ and it can be concluded that the mother's age during pregnancy is a risk factor for LBW. Mothers who are pregnant at <20 years of age are 6.968 times more likely to give birth to LBW babies than mothers who give birth at 20-35 years of age.

Table 3. Characteristics of Gestational Age at Delivery

Gestational Age	Case		Control	
	n=37	%	n=37	%
Preterm	22	59,5	0	0,0
Aterm	15	40,5	37	100,0

“Source: Primary Data Processed, 2026”

The characteristics of gestational age are shown in Table 3. The data show that there were 22 respondents (59.5%) in the case group who gave birth at <37 weeks of gestation (preterm) and 15 respondents (40.5%) in the case group who gave birth at full term (aterm). Meanwhile, all mothers in the control group gave birth at full term, namely 37 people (100%). This pregnancy age data is still descriptive and has not been statistically tested. Therefore, further analysis such as bivariate analysis is needed to determine whether pregnancy age has a significant relationship with Low Birth Weight (LBW).

Table 4. Bivariate Analysis: Gestational Age and Birth Weight

Gestational Age	Birth Weight				OR (95% CI)	p-value
	LBW		Not LBW			
	n=37	%	n=37	%		
Preterm	22	59,5	0	0,0	3,467	0,001
Aterm	15	40,5	37	100,0	(2,262-	
Total	37	100	37	100	5,313)	

“Source: Primary Data Processed, 2026”

The bivariate analysis shown in Table 4 shows the relationship between gestational age and birth weight. The test results show that the calculated value is smaller than the α value (0.05), which means that there is a significant relationship between gestational age at delivery and low birth weight (LBW). The odds ratio (OR) value obtained in the study was 3.467, which means that $OR > 1$ and it can be concluded that gestational age at delivery is a risk factor for LBW. Mothers who give birth at a gestational age of < 37 weeks (preterm) have a 3.467 times greater chance of giving birth to a LBW baby compared to mothers who give birth at a gestational age of 37-42 weeks (aterm).

Table 5. Characteristics of Mother's Age at Marriage

Gestational Age	Case		Control	
	n=37	%	n=37	%
Merarik Kodeq	25	67,6	9	24,3
Not Merarik Kodeq	12	32,4	28	75,7

“Source: Primary Data Processed, 2026”

The characteristics of the mothers' age at marriage are shown in Table 5. The data show that there were 25 respondents (67.6%) in the case group who married early and 12 respondents (32.4%) in the case group who did not marry early. Meanwhile, in the control group, there were 9 mothers (24.3%) who married at an early age and 28 mothers of toddlers (75.7%) who did not marry at an early age. The data on the age of mothers at marriage is still descriptive and has not been statistically tested. Therefore, further analysis, such as bivariate analysis, is needed to determine whether the age of mothers at marriage has a significant relationship with low birth weight (LBW).

Table 6. Bivariate Analysis: Mother's Age at Marriage and Birth Weight

Gestational Age	Birth Weight				OR (95% CI)	p-value
	LBW		Not LBW			
	n=37	%	n=37	%		
Merarik Kodeq	25	67,6	9	24,3	6,481	0,001
Not Merarik Kodeq	12	32,4	28	75,7	(2,340-	
Total	37	100	37	100	17,952)	

“Source: Primary Data Processed, 2026”

The bivariate analysis shown in Table 6 shows the relationship between the mother's age at marriage and the child's birth weight. The test results show that the calculated value is smaller than the α value (0.05), which means that there is a significant relationship between the mother's age at marriage and low birth weight (LBW). The odds ratio (OR) value obtained in the study was 6.481, which means that $OR > 1$ and it can be concluded that the mother's age at marriage is a risk factor for LBW. Mothers who were coded as < 19 years old had a 6.481 times greater chance of giving birth to a baby with LBW compared to mothers who were not coded as such.

DISCUSSION

The Relationship between Maternal Age during Pregnancy and Low Birth Weight (LBW)

Pregnancy in high-risk age groups is not recommended because it can increase the likelihood of not meeting essential nutritional needs, such as protein, energy, vitamins, minerals, folic acid, iron, calcium, and other nutrients that play a role in supporting fetal growth and development. Failure to meet the nutritional needs of the fetus will have an impact on the baby's weight at birth (Subagja et al., 2024).

Based on the results of testing the relationship between the mother's age during pregnancy and low birth weight (LBW) in the working areas of the Kediri & Banyumulek Community Health Centers, it was found that there was no relationship between the two variables. This was because most of the respondents were in the low-risk age group (20-35 years). The results of this study are in line with research conducted by Subagja et al. in 2024, which stated that there was no relationship between the age of pregnant women and the incidence of LBW with a p-value of 0.283. Apriani & Subandi (2021) also stated that there was no relationship between the age of pregnant women and the incidence of LBW. This was proven by the chi-square test results, which showed a p-value of 0.656.

The Relationship Between Gestational Age and Low Birth Weight (LBW)

Gestational age plays a role in the occurrence of LBW, because the shorter the gestational age, the less optimal the development of the fetus's organs, thus affecting the baby's low birth weight (Purwanto & Wahyuni, 2016). A gestational age of <37 weeks or prematurity can be one of the main risk factors for LBW because the fetus has not experienced maximum growth. As gestational age increases, fetal growth and development also accelerate. Therefore, when a baby is born before reaching the expected gestational age (<37 weeks), its length and weight have not had time to develop optimally (Santoso et al., 2023).

Based on the results of testing the relationship between gestational age at delivery and low birth weight (LBW) in the working areas of the Kediri and Banyumulek Community Health Centers, it was found that there is a relationship between the two variables. This is because most of the respondents in the case group had a history of preterm pregnancy with an average gestational age of < 37 weeks and gave birth to babies in the LBW category. The results of this study are in line with research conducted by Apriani & Subandi (2021), which states that there is a significant relationship between gestational age and the incidence of LBW at the Cilacap Regional General Hospital. This is evidenced by the chi-square test results, which show a p-value of 0.000. In this study, the OR value of 20.213 means that preterm pregnancy is 20.213 times more likely to result in the birth of a low birth weight baby than full-term pregnancy.

The Relationship between Mother's Age at Marriage and Low Birth Weight (LBW)

Early marriage in women has the potential to increase risks during pregnancy and childbirth. The younger a woman is when she marries, the greater the risk to the safety of the mother and child. This is due to the reproductive organs not being fully mature and the woman not being mentally prepared for married life (Sahara, 2025).

Based on the results of testing the relationship between the mother's age at marriage and low birth weight (LBW) in the working areas of the Kediri and Banyumulek Community Health Centers, it was found that there is a relationship between the two variables. This is because most of the respondents who were included in the case group were married at an age of <19 years (merarik kodeq). Of the 74 respondents, 34 mothers of toddlers married at an age <19 years. After conducting interviews, the reason these mothers married at an early age was because they loved each other and did so of their own free will, not because of coercion from their parents or other family members.

In this study, mothers who practice merarik kodeq are 3.467 times more likely to give birth to babies with low birth weight (LBW) than mothers who do not practice merarik kodeq. This is because mothers who practice merarik kodeq give birth to more babies with LBW than babies with normal weight, so this study states that merarik kodeq is a risk factor for LBW. This is in line with research conducted by Sahara (2025), which states that there is a significant relationship between early marriage (merarik kodeq) and LBW, indicated by a p-value of 0.031.

CONCLUSIONS

The results of the study indicate that there is a significant relationship between gestational age and maternal age at marriage with low birth weight (LBW). There is a significant p-value = 0.001 for the relationship between these two variables and LBW. It is recommended that future researchers use a larger sample size to obtain more representative results. For local governments, the advice that can be given is to strengthen premarital education, namely regarding the risks of early marriage.

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