



UNCOVERING THE CHARACTERISTICS OF LOW BIRTH WEIGHT BABIES IN AGRICULTURAL AREAS

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ABSTRACT

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Work in agricultural areas can affect the health of the mother during physically demanding pregnancies, exposure to pesticides, other harmful substances used, long working hours, and low concern for antenatal care. This is one of the causes of BBLR, especially in agricultural areas. The purpose of describing the characteristics of BBLR in agricultural areas treated at dr. Haryoto Lumajang Hospital. Quantitative method with observational design, using retrospective approach of secondary data. The population is BBLR aged 0-28 days who are treated in the Neonatal room of dr. Haryoto Lumajang Hospital. Sampling through 50% of cases from 2020-2022. The data are analyzed univariately, presented in the form of graphs. The results of BBLR characteristics in agricultural areas treated at dr. Haryoto Lumajang Hospital, including 83% with third trimester pregnancies, 66% premature, 72% spontaneous births, 10% born with meconium amniotic, 13% born with RDS, 70% born to multiparous mothers, 53% born with mild asphyxia. Conclusion The characteristics of BBLR in agricultural areas treated at dr. Haryoto Lumajang Hospital include 3rd trimester pregnancy, prematurity, spontaneous birth, birth with meconium amniotic, birth with RDS, born to multiparous mothers, and born with mild asphyxia. There needs to be proper prevention starting from pregnancy in order to prevent low birth weight so as to minimize abnormal growth and development.

Keywords:

Agriculture, Characteristic, Low birth weight babies, Medical records

BACKGROUND

Low birth weight (BBLR) is a public health problem worldwide. BBLR incidents are prone to occur in Indonesia, categorized as low- and middle-income countries. Various factors cause low birthweight, in general, the incidence of low birth weight is caused by four factors, namely, mother, baby, environment, and demographics. Lumajang Regency with a demographic that is more directed towards agricultural areas with the incidence of BBLR treated at dr. Haryoto Hospital has increased from 2020 to 2022. Farm work can also affect the health and well-being of the mother, especially during physically demanding pregnancies, exposure to pesticides, and other harmful substances used in agricultural areas, long working hours, and concern for antenatal care (Zar et al., 2019). On research (Rizkika, Rahfiludin and Asna, 2023) reveals the characteristics of agricultural and tobacco-producing areas. This agricultural relationship cannot be separated from the use of pesticides. Based on previous research, smoking and pesticide exposure are associated with low birth weight.

All mothers, including those in agricultural areas, expect a standard or vaginal delivery (Visser et al., 2020). There is a desire for a more natural birth, a shorter recovery time, and a belief in a better normal birth and initiation of breastfeeding (Sun et al., 2020). A variety of factors, including cultural norms, education, access to health care, and personal experiences can influence these expectations and realities. Unique challenges and considerations for mothers in agricultural areas (Belayneh, Loha and Lindtjørn, 2021), related to the work environment, access to health services, and socioeconomic factors. Despite living in a farming area, every parent wants to have a baby born normally.

Normal baby condition is healthy and has no congenital abnormalities or severe health conditions (Wall et al., 2010). Normal baby birth is the mother's gestational age, term or from 37 weeks to 42 weeks. One sign of a full-term baby is an average birth weight of 2500 grams to 4000 grams. A typical baby's birth weight will support better growth and development, indicating that maximum nutrition is met during intrauterine growth, healthy organ development, brain function, and maximum growth potential. Normal birth weight has a lower risk of certain health complications and is a positive indicator of the baby's well-being (Rito et al., 2019).

The well-being of the baby in childbirth, which is expected to be normal, sometimes becomes ab-

normal. The abnormal condition of the baby can be caused by factors of the mother and the baby itself. The cause of maternal factors can be due to gestational age less than 37 weeks, the presence of comorbidities, or bad habits. The cause of the baby factor can be due to birth weight less than 2500 grams, smaller birth weight during pregnancy (low birth weight babies), settling diseases, or congenital abnormalities. Low birth weight babies will affect the growth and development of the following abnormal baby conditions because they are prone to several diseases and complications at birth (Gupta et al., 2019).

The condition of low birth weight babies with various existing health problems makes it a concern for all of us. Low birth weight babies that are not handled optimally will interfere with further growth and development compared to babies born with average body weight (Zar et al., 2019). Potential growth disorders experienced, including slower weight gain than babies with average birth weight. Neurodevelopment also has potential delays, including cognitive difficulties and learning and focusing. This can happen until childhood and beyond. Other health problems can occur in low birth weight babies, including breathing, easy infection, and abnormalities in the digestive tract (Patel et al., 2019).

The problem that occurs in low birth weight babies is a concern for all of us because it concerns the quality of future generations. Early prevention efforts by all levels of society, including health workers in basic and advanced services or hospitals (Woldeamanuel et al., 2019). Early and appropriate prevention and treatment can be done if we can know the characteristics of the incidence of low birth weight babies. This study aims to reveal the characteristics of low birth weight babies in agricultural areas treated at Dr. Haryoto Lumajang Hospital.

METHOD

Research design is quantitative research with observational design, using a retrospective approach of secondary data, this is to be able to explain and reveal characteristics, facts, behaviors, and phenomena in a given population (Sharma et al., 2019). The population is low birth weight babies aged 0-28 days who are treated in the Neonatal room of dr. Haryoto Lumajang Hospital. Taking a sample of 50% of cases from each year, that is, in 2020, a total of 76 cases. In 2021 there were 124 cases, and in 2022 there were 149 cases. The data collection of the 2020-2022 medical record study used a list of characteristics of low

birth weight babies, which included data (gestational age, baby's birth condition, type of delivery, labor complications from maternal factors, labor complications from infant factors, parity, infant Apgar Score). Data are analyzed univariately and presented in the form of graphs. Ethical approval is obtained from the Faculty of Nursing, Jember University. The ethical approval reference number is No. 066/UN25.1.14/KEPK/2023 and obtained permission from the Director of dr. Haryoto Lumajang Hospital to conduct research with secondary data.

RESULT

The characteristics of newborns in agricultural areas treated at Dr. Haryoto Lumajang Hospital based on medical records from 2020 -2022 are detailed as follows:

The graph shows the gestational age of most mothers in the third trimester of 2020 was 57, in 2021 it was 102 and increased by 129 in 2022 who gave birth to babies with low birth weight.

Premature birth occurs in low birth weight babies in the Neonatology room of dr. Haryoto Lumajang, which is 51 in 2020, 80 in 2021 and 100 in 2022.

Spontaneous labor is a type of labor that occurs in low birth weight births at dr. Haryoto Lumajang Hospital totaling 46 in 2020, a total of 102 in 2021 and 103 in 2022.

Low birth weight babies at dr. Haryoto Lumajang Hospital were born to mothers who experienced complications of amniotic membranes containing meconium in 2020 a total of 9, in 2021 a number of 10 and in 2022 a number of 17.

The complications that occur due to infant factors in low birth weight babies at dr. Haryoto Lumajang Hospital are mostly caused by Respiratory Distress Syndrome (RDS) in 2022 at 48.

The parity of mothers who gave birth to low birth weight babies at dr. Haryoto Lumajang Hospital most of them were multiparity or the birth of more than one child, namely in 2020 a total of 56, in 2021 and 2022 each a total of 94.

The initial assessment of the birth of low birth weight babies at dr. Haryoto Lumajang Hospital mostly experienced mild asphyxia (score 7-10) of 46 in 2020, 63 in 2021 and 76 in 2022.

DISCUSSION

The results of research on BBLR agricultural areas with risks that can occur due to several

factors, one of which is due to the vulnerability of work in agricultural areas that can affect the health and welfare of mothers, especially during physically demanding pregnancies, exposure to pesticides, and other harmful substances used in agricultural areas, long working hours, and concern for antenatal care. The characteristics of Low Birth Weight Babies (BBLR) in agricultural areas treated at dr. Haryoto Lumajang Hospital based on secondary data from 2020 to 2022 include births occurring in the third trimester of pregnancy (29-40 mg) amounting to 83%. This proves that there is still a birth before term. There is still a need for routine pregnancy checks to detect abnormalities in infants and mothers in agricultural areas, especially Lumajang Regency. At the time of the examination, an initial screening will be carried out regarding the mother's medical history, family medical history, and previous childbirth history (Sharma et al., 2019). This is to anticipate if there are abnormalities before the initial treatment is given. Further examination can provide information about the health condition of the mother and the baby conceived, recommended activities, including nutrition, and a suitable environment for the mother during pregnancy. The information obtained enables individuals/mothers and families to make safe and healthy choices (Englund-Ögge et al., 2014).

The second characteristic is according to the results of pregnancy above, that most of them are premature births 66% in BBLR agricultural areas treated at dr. Haryoto Lumajang Hospital. Preterm birth can be overcome through the intake of nutritious foods and healthy living habits before and during pregnancy (Anil, Basel and Singh, 2020). Reduced risk of premature birth can be prevented by a healthy nutritional diet high in protein and nutritionally balanced, in addition to the amount and frequency of nutrients according to the needs of pregnant women (Rito et al., 2019). The mother's activities during pregnancy also need to be considered, including rest, exercise, and avoiding stress or anxiety (Louis et al., 2019). The addition of drinking milk, micronutrients including vitamins, and blood milk tablets can also be done during pregnancy. The condition of pregnant women can be prepared starting from adolescence and pregnancy planning to pregnancy. The goal of this treatment is not only to improve the health of a woman starting in adolescence, between pregnancy and subsequent pregnancies but also throughout her life (Avar, McLeod and Jackson, 2021). Every woman of reproductive age who has become pregnant, regardless of the outcome of their pregnancy (miscarriage, premature birth, action birth), is advised to un-

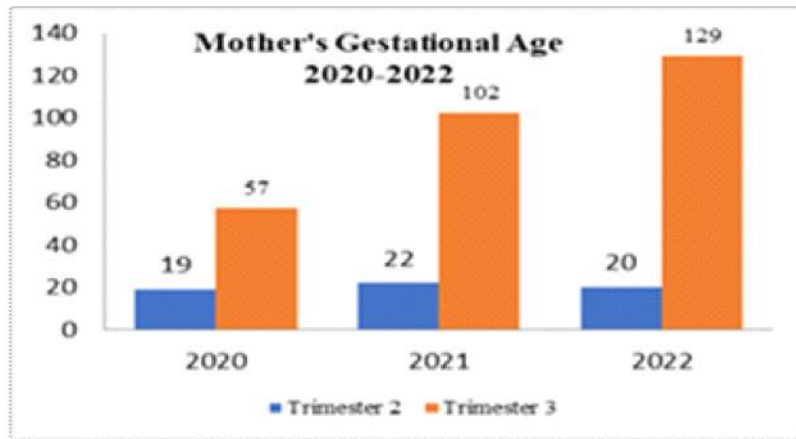


Figure 1. Mother's Gestational Age



Figure 2. Baby's Birth Conditions

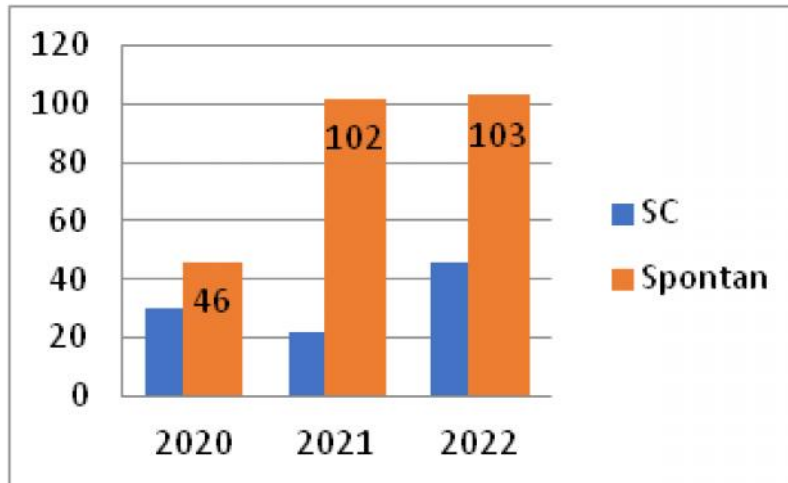


Figure 3. Types of Childbirth

dertake reproductive life planning, screening for depression or anxiety, vaccination, and managing diabetes or hypertension if necessary. Education or information about future health to optimize health before future pregnancies (Gupta et al., 2019; Tessema et al., 2021). For women who are about to terminate a pregnancy, the period after pregnancy also provides an opportunity for secondary prevention and improved health in the future. Maternal morbidity and mortality

rates can be prevented or reduced, which has an impact on preventing and reducing the rate of low birth weight births (Edstedt Bonamy et al., 2019).

The third characteristic of BBLR in agricultural areas treated at dr. Haryoto Lumajang Hospital is 72% spot delivery. But spontaneous labor that occurs still experiences complications from the mother. This is the fourth characteristic of BBLR, namely, delivery with amniotic fluid containing 10% meco-

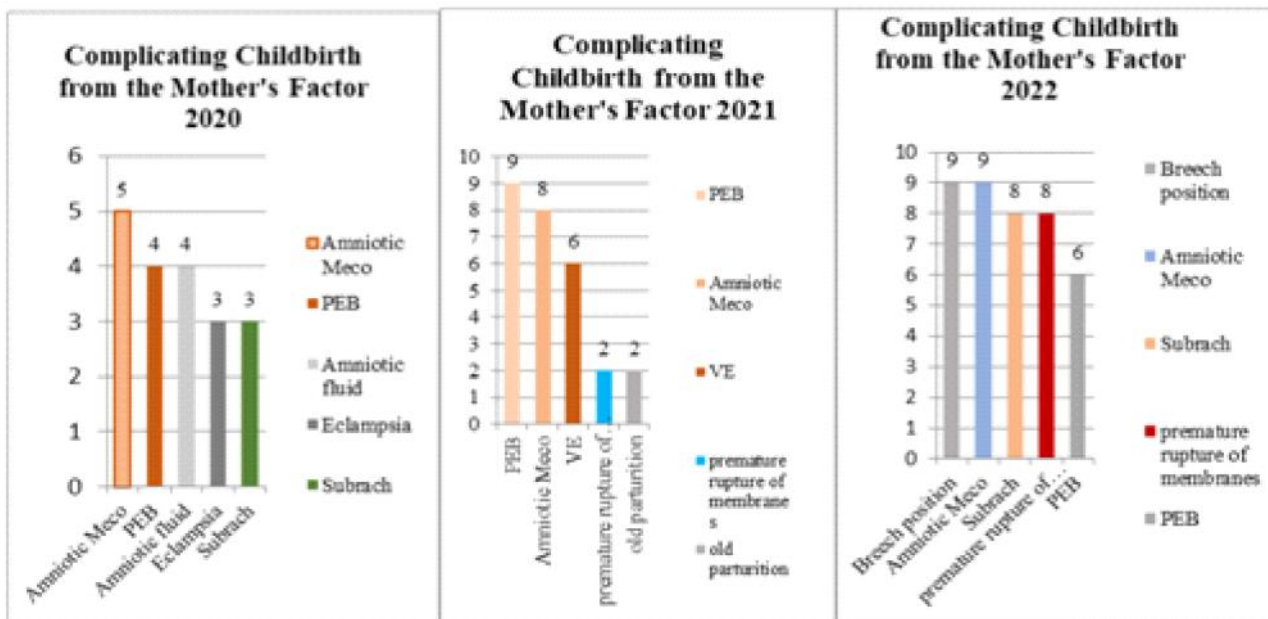


Figure 4. Complicating Childbirth from the Mother's Factor

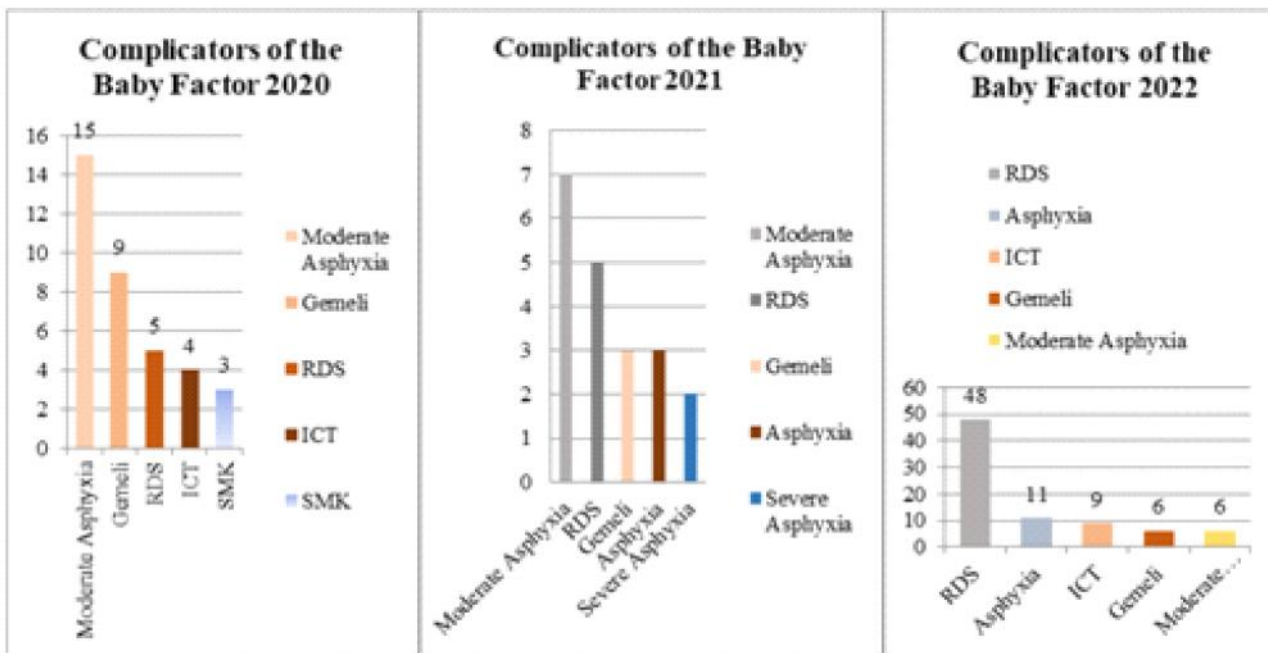


Figure 5. Complicators of the Baby Factor

nium. Difficult delivery of maternal factors in low birth weight babies with amniotic membranes containing meconium because this is an early sign of respiratory problems in the baby in the womb. The condition of the baby in this incident causes asphyxia from mild to severe. Meconium aspiration that occurs in infants less than a full month or month can be one cause of morbidity (Edstedt Bonamy et al., 2019; Martins, Biggio and Abuhamad, 2020). These mechanical events can obstruct the airways and can chemically damage the airway and alveolar epithelium. Surfactants can be reduced in function or damage the alveoli, resulting in infant apgar values. The

trigger for meconium aspiration can be due to mothers who smoke or are obese.

The fifth characteristic in this study is the complicating labor factor from the infant factor due to Respiratory Distress Syndrome (RDS) amounting to 13%, this is due to low birth weight, which can spur surfactant immaturity, in addition to the presence of amniotic meconium. Surfactant maturity in infants with low birth weight or prematurity does not have enough mature or sufficient surfactant. The mixture of phospholipids and proteins produced in the lungs is a surfactant that helps stabilize the surface of the alveoli during breathing. Respiratory Distress

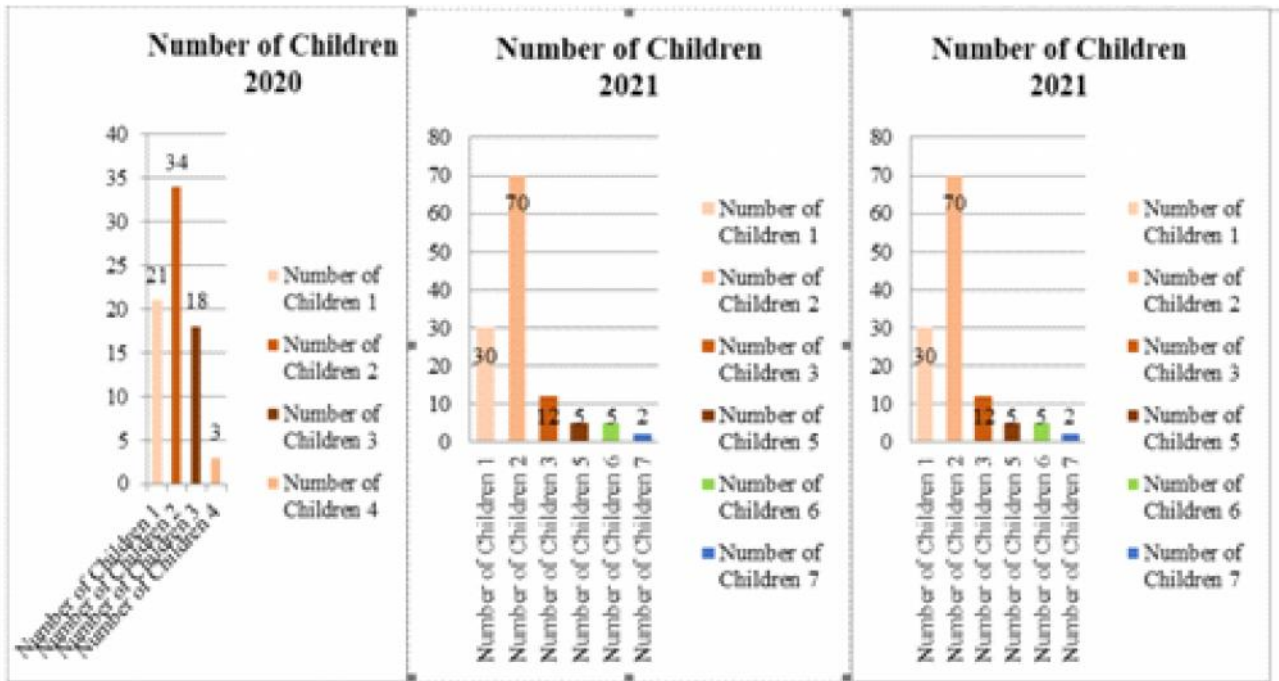


Figure 6. Parity (Number of Children)

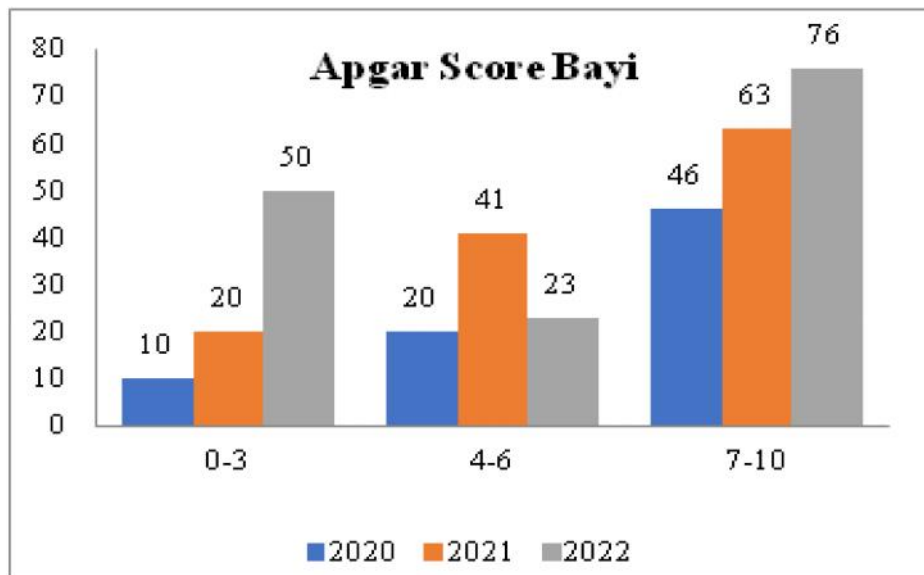


Figure 7. Apgar Score Baby

Syndrome (RDS) or this syndrome can occur in babies born prematurely or with low birth weight, so they have difficulty breathing and maintaining lung stability (McGoldrick et al., 2020). Treatment can be done by giving surfactants to help increase the stability of the alveoli and reduce breathing difficulties that can lead to a stable exchange of oxygen and carbon dioxide in the lungs of low birth weight babies. The hope is that it can reduce the risk of respiratory complications and improve the survival of the baby (Woldeamanuel, 2020).

The sixth characteristic that occurs in BBLR at dr. Haryoto Lumajang Hospital is that most of them are born from multiparous 70%. A history of past or

pre-pregnancy childbirth is also worth knowing, especially if the mother had an illness or abnormality after the previous child was born (Woldeamanuel, 2020). Initial assessment by competent health workers is needed to determine maximum and appropriate treatment. A well-planned pregnancy can avoid the birth of a baby with low birth weight. If you have given birth to a low birth weight baby, you should also regularly monitor its growth and development (Lewandowska, 2021).

The initial assessment of the Apgar Score is the seventh characteristic of BBLR in agricultural areas treated at dr. Haryoto Lumajang Hospital. This assessment, is decisive for further treatment mea-

tures (Dumitriu et al., 2021). The Apgar scores assessed in the first, fifth, and tenth minutes are the beginning of medical and team activities for the survival of the baby. Babies born with low birth weight need to get intensive care and maximum nutritional intake (Gibberd et al., 2019; Pradanie, Rachmawati and Cahyani, 2020).

CONCLUSION

The characteristics of low birth weight babies in Lumajang Regency which is an agricultural area, especially those who receive treatment at dr. Haryoto Lumajang Hospital based on sejunder data or medical records from 2020 to 2022 include gestational age in the third trimester, types of spontaneous labor, amniotic labor containing meconium, birth of RDS babies, occurs in multiparous maternal birth, and the infant's Apgar Score is mild asphyxia. Disclosure of these characteristics can be a reference in caution, especially the need for proper prevention starting from pregnancy in order to prevent low birth weight so as to minimize abnormal growth and development.

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