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# The Effect of Preconception Nutritional Status on Birth Weight of Babies in Maternity Women in Purwakarta Regency, Indonesia

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**A B S T R A C T**

Preconception nutritional status is one of the factors that can influence a baby's birth weight. This study aims to determine the effect of preconception nutritional status on birth weight of babies in maternity mothers in Purwakarta Regency, Indonesia. This research uses a descriptive analytical research design with a cross-sectional approach. The research sample was 100 maternity mothers in Purwakarta Regency, Indonesia. Data was collected through interviews and anthropometric examination. Data analysis used the Pearson correlation test. The results of the study showed that there was a significant relationship between preconception nutritional status and the baby's birth weight (r=0.714; p<0.001). Mothers with good preconception nutritional status have a lower risk of giving birth to babies with low birth weight (LBW) compared to mothers with poor or poor preconception nutritional status. The conclusion of this study is that preconception nutritional status has a positive effect on the baby's birth weight. Therefore, it is important for women of childbearing age to maintain their nutritional status so they can give birth to healthy and prosperous babies.

## 1. Introduction

Preconception nutritional status is the nutritional condition experienced by a woman before pregnancy. Good preconception nutritional status is one of the factors that can influence a baby's birth weight. A baby's birth weight is an indicator of a baby's health. Babies with low birth weight (LBW) have a higher risk of experiencing various health problems, such as neonatal death, infections, mental retardation, and chronic diseases later in life. There are several factors that can influence a baby's birth weight, one of which is preconception nutritional status. Mothers with good preconception nutritional status have better energy and nutritional reserves to support fetal growth and development. Adequate energy and nutritional reserves are needed to support fetal growth, especially in the second and third trimesters of pregnancy. In the second trimester, the fetus begins to experience rapid growth, especially the growth of vital organs. In the third trimester, the fetus begins to experience bone and muscle growth.[1,2]

Mothers with poor or poor preconception nutritional status have a higher risk of giving birth to LBW babies. This is because mothers with poor or poor preconception nutritional status have inadequate energy and nutritional reserves to support fetal growth and development. Therefore, it is important for women of childbearing age to maintain their nutritional status so they can give birth to healthy and prosperous babies. Women of childbearing age can maintain their nutritional status by consuming nutritionally balanced foods, exercising regularly, and avoiding

smoking and drinking alcoholic beverages.[3,4]

Based on 2018 Riskesdas data, the prevalence of chronic energy deficiency (CED) in women of childbearing age (WUS) in Indonesia is 14.5%. The prevalence of CED among WUS in Purwakarta Regency, West Java, in 2022 will be 12.5%. CED is an indicator of poor preconception and nutritional status. Several previous studies have shown a significant relationship between preconception nutritional status and the baby's birth weight. Other research shows that mothers with good preconception nutritional status have a lower risk of giving birth to LBW babies than mothers with poor or poor preconception nutritional status.[5] This study aims to determine the effect of preconception nutritional status on the birth weight of babies in maternity mothers in Purwakarta Regency, Indonesia.

## 2. Methods

This research uses a descriptive-analytical research design with a cross-sectional approach. The research population was all mothers giving birth in Purwakarta Regency, Indonesia. The research sample consisted of 100 mothers who met the inclusion and exclusion criteria. Inclusion criteria were mothers aged 20-35 years, singleton pregnancies, and no chronic diseases. The exclusion criteria are mothers who have congenital abnormalities in their babies. Data was collected through interviews and anthropometric examination. Interview data includes sociodemographic data, such as age, education, employment, and economic status. Anthropometric data includes preconception height, weight, and body mass index (BMI) data. Data analysis used the Pearson correlation test.

## 3. Results and Discussion

The results of the study showed that of the 100 birth mothers studied, 60% had good preconception nutritional status, 25% had poor preconception nutritional status, and 15% had poor preconception nutritional status. The results of the data analysis showed that there was a significant relationship between preconception nutritional status and the baby's birth weight ($r=0.714$; $p<0.001$). Mothers with good preconception nutritional status have an average birth weight of 3,200 grams, while mothers with poor or poor preconception nutritional status have an average birth weight of 2,800 grams.

Preconception nutritional status has a positive effect on the baby's birth weight. This means that mothers with good preconception nutritional status have a greater chance of giving birth to babies with normal birth weight than mothers with poor or poor preconception nutritional status. Mothers with good preconception nutritional status have better energy and nutritional reserves to support fetal growth and development. This is because mothers with good preconception nutritional status have consumed nutritionally balanced foods and exercised regularly before becoming pregnant. Adequate energy and nutritional reserves are needed to support fetal growth, especially in the second and third trimesters of pregnancy. In the second trimester, the fetus begins to experience rapid growth, especially the growth of vital organs. In the third trimester, the fetus begins to experience bone and muscle growth. Mothers with poor or poor preconception nutritional status have a higher risk of giving birth to LBW babies. This is because mothers with poor or poor preconception nutritional status have inadequate energy and nutritional reserves to support fetal growth and development. Babies with LBW have a higher risk of experiencing various health problems, such as neonatal death, infections, mental retardation, and chronic diseases later in life. Therefore, it is important for women of childbearing age to maintain their nutritional status so they can give birth to healthy and prosperous babies.[6-8]

Preconception nutritional status is the nutritional condition experienced by women before pregnancy. Good preconception nutritional status is one of the

factors that can influence fetal growth and development. The growth and development of the fetus require sufficient energy and nutrition. Mothers with good preconception nutritional status have better energy and nutritional reserves to support fetal growth and development. Adequate energy and nutritional reserves are needed to support fetal growth, especially in the second and third trimesters of pregnancy. In the second trimester, the fetus begins to experience rapid growth, especially the growth of vital organs. In the third trimester, the fetus begins to experience bone and muscle growth. Mothers with poor or poor preconception nutritional status have a higher risk of giving birth to babies with low birth weight (LBW). This is because mothers with poor or poor preconception nutritional status have inadequate energy and nutritional reserves to support fetal growth and development.[9,10]

## 4. Conclusion

Preconception nutritional status has a positive effect on the baby's birth weight. Therefore, it is important for women of childbearing age to maintain their nutritional status so they can give birth to healthy and prosperous babies.

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