

EFFECTS OF MATERNAL EDUCATION, PSYCHOSOCIAL STRESS, NUTRITIONAL STATUS AT PREGNANCY, AND FAMILY INCOME, ON BIRTHWEIGHT IN NGANJUK, EAST JAVA

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ABSTRACT

Background: Low birthweight (LBW) is one of the primary causes of infant mortality. It shares 27% of infant mortality rate (IMR). The Indonesian Demographic and Health Survey in 2007 reported that the IMR was 34 deaths per 1,000 live births. As much as 30.3% of this rate was accounted by LBW. As such LBW is an important global public health issue. Countries around the world have committed to overcome this problem. This study aimed to investigate the effects of maternal education, psychosocial stress, nutritional status at pregnancy, and family income, on birthweight.

Subjects and Method: This was an observational analytic study with case control design. The study was conducted in Ngetos community health center, Nganjuk, East Java, from May to June, 2017. A total sample of 120 were selected for this study by fixed disease sampling, comprising 40 infants with low birthweight and 80 infants with normal birthweight. The dependent variable was birthweight. The independent variables were maternal education, psychosocial stress, nutritional status at pregnancy (middle-upper arm circumference, MUAC), maternal anemia, and family income. MUAC was measured by MUAC measuring tape. Hemoglobin concentration was measured by Sahli meter. Psychosocial stress was measured by Holmes and Rahe stress scale. The other variables were measured by a set of questionnaire. Path analysis was used for data analysis.

Results: MUAC ≥ 23.5 cm ($b = -0.80$, $SE = 0.57$; $p = 0.064$), hemoglobin concentration ≥ 11 g/dL ($b = -120.16$, $SE = 45.14$, $p = 0.008$), and low psychosocial stress ($b = -0.80$, $SE = 0.57$, $p = 0.164$) directly and negatively affected low birthweight. Maternal education \geq Senior High School ($b = 1.28$, $SE = 0.056$, $p = 0.022$), psychosocial stress ($b = -0.001$, $SE < 0.001$, $p = 0.097$), and family income ($b = 0.97$, $SE = 0.46$, $p = 0.036$) positively affected MUAC. MUAC ≥ 23.5 cm positively affected hemoglobin concentration ≥ 11 g/dL ($b = 0.19$, $SE = 20.84$, $p < 0.001$).

Conclusion: MUAC, hemoglobin concentration, and low psychosocial stress directly and negatively affect low birthweight.

Keywords: low birthweight, MUAC, maternal anemia, psychosocial stress, family income

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