ABSTRACT

**Background.** Low birth weight (LBW) remains a major cause of death and illness in infants. The problem is an important focus in health in pregnant women throughout the world, especially in developing countries.

**Objective.** To identify the effect of omega-3 fatty acid intake, protein, folic acid and nutritional status of third trimester pregnant with Low Birth Weight (LBW).

**Subject and Methods.** This study was an analytic observational study with cohort approach. This study was conducted at health center in Ende City from Januari to Maret 2019. Samples were as many as 109 pregnancy of trimester III. Sampling technique in this study was using purposive sampling. Data collection techniques using the SQ-FFQ questionnaire and Form Recall 3x24 hours, were analyzed using path analysis.

**Result.** Intake of omega-3 fatty acids in third trimester pregnant women has 2 times the risk of LBW, the total intake of vegetable and animal protein has a risk of 9 times LBW, folic acid intake has a risk of 13 times LBW and nutritional status of third trimester mothers risk 17 times the incidence of LBW.

**Conclusion.** The intake of omega-3 fatty acids is < 200 mg per day, total vegetable animal protein <100 grams per day, folic acid < 600 µg per day and LiLA <23.5 cm in third trimester pregnant have a direct effect on the incidence of LBW.

**Keyword:** Omega-3 fatty acid intake, protein , folic acid, nutritional status of third trimester pregnant, low birth weight.