

**ABSTRACT**

Diarrhea is a major cause of child mortality in developing countries, with a range of 1,3 billion incidences and 3,2 million deaths every year. Based on the Indonesia Health Profile 2013, diarrhea was the first cause of death in under-five children (25,2%). The objective of this study was to develop a predictive model of the incidence of acute diarrhea in under-five children in Pacar Keling health center in Surabaya. The research method used a case-control design with a sample of 152 (76 cases and 76 controls). The sampling technique was simple random sampling. The data were analyzed using multivariable analysis by using multiple logistic regression. The results showed that the incidence of diarrhea associated with birth weight with  $p = 0.043$  (OR=7,581, 95%CI:1.061-54.159), nutritional status based on PB/U= 0.022 (OR=3,211, 95%CI:1.183-8.718), the measles immunization status  $p = 0.023$  (OR=17,904, 95%CI:1.494-214.572), breast-feeding  $p = 0.003$  (OR=3.696, 95%CI:1.566-9.026); mother's knowledge  $p = 0.003$  (OR=3.696, 95%CI: 1.577-8.696); and history of giving zinc  $p = 0.000$  (OR=11.902, 95%CI: 4.222-33.547). While the factors that did not relate significantly in this research were mother's habit of washing hands ( $p = 0.359$ ) nutritional status based on BB/U ( $p = 0,546$ ). Influencing factors that format prediction model for acute diarrhea incidence in under-five children were birth weight, nutritional status based PB/U, the measles immunization status, the pattern of breastfeeding, the mother's knowledge, and zinc supplementation history. It is advisable to give education to parents equipped with health promotion media in order to be easily understood.

Keywords: Surabaya, diarrhea, measles immunization, zinc