MULTILEVEL ANALYSIS: DETERMINANTS OF DIARRHEA OCCURRENCE IN CHILDREN UNDER FIVE IN BANJARNEGARA DISTRICT

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ABSTRACT

Background: Diarrheal disease is the leading cause of child death and illness in the world. Diarrhea is one of the most potent endemic diseases in Indonesia. Children under five were the most affected group by this disease. This study aimed to determine the effect of nutritional status, information exposure, prevention behavior, income, social capital, and environmental sanitation on the incidence of diarrhea in children under five in Banjarnegara District, Central Java, using multilevel analysis.
Subjects and Method: This was an analytic observational study with a case-control design. The study was conducted in Banjarnegara, Central Java, from January to February 2018. A total of 25 villages was selected using stratified random sampling, based on village stratification criteria. A sample of 250 children under five was selected for this study by fixed disease sampling, consisting of 125 children with diarrhea and 125 healthy children. The dependent variable was diarrhea. The independent variables at level 1 were nutritional status, information exposure, prevention behavior, income, social capital, and environmental sanitation. Village stratification was used as the contextual factor at level 2. The data were collected by a set of pre-tested questionnaire and analyzed by multilevel logistic regression analysis using Stata 13.
Results: Poor nutritional status (b= 1.33; 95% CI= -0.14 to 2.82; p= 0.077), poor prevention behavior (b= 1.52; 95% CI= 0.81 to 2.24; p<0.001), low income (b= 1.52; 95% CI= 0.80 to 2.25; p<0.001), weak social capital (b= 1.80; 95 % CI= 1.04 to 2.56; p<0.001), and poor environmental sanitation (b= 1.12; 95% CI= 0.39 to 1.85; p= 0.003) increased the risk of diarrhea. Exposure to information (b= 0.90; 95% CI= 0.17 to 1.64; p= 0.015) decreased the risk of diarrhea. The village stratification showed a strong contextual effect on the incidence of diarrhea with intra-class correlation (ICC)= 15.78%.
Conclusion: Poor nutritional status, poor personal hygiene, low income, weak social capital, and poor environmental sanitation increase the risk of diarrhea.

Keywords: determinant, diarrhea, children under five, multilevel analysis

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