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Ordinal Logistic Regression Analyses on Anemia for Children Aged 6 Months to 5 Years Old in the Philippines

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Abstract: Anemia is one of the most prevalent nutritional deficiencies in the world with one out of four people being considered anemic. Anemia is considered one of the factors that negatively affect preschool children and prevalence of anemia among these children is second to the highest here in the Philippines. It is well known that anemia leads to damaging consequences such as hindered physical and cognitive development and weakened immune system. In this study, hemoglobin level was analyzed through ordinal logistic regression models using the data from the 2008 National Nutrition Survey. The estimates generated strongly suggested that malnourished children were more likely to be anemic. Moreover, the results showed that children whose age is between 6-11 months required more attention since this age group was at most risk with anemia. Nutrient intake was found to be significant and the likelihood of developing anemia was lessened when proper diet was implemented. The ordinal logistic models were also compared to the multiple linear regression models and the multinomial logistic regression models. Finally, for assessing moderate to severe anemia level it was found that multinomial logistic model is more appropriate while an ordinal logistic regression was found better for mild anemia level.

Key Words: Anemia; Hemoglobin Level; Ordinal Logistic Regression