

ABSTRACT

Malnutrition is often found on infants and early childhood. One of the causes of this nutritional problem is energy deficiency. In this case, due to low calorie intake the glucose reserves stored within muscles and liver are involuntarily broken down to improve energy needed. One of the effort conducted to overcome malnutrition is Supplementary Food Provision program (Indonesian: *Pemberian Makanan Tambahan/PMT*). The purpose of this study was to analyze the effect of *Moringa oleifera* supplemental feeding provision as supplementary food ingredient and biscuits towards body weight, height and hemoglobin contents in infants with underweight nutritional status at the age of 12-59 months in Kalumpang Primary Health Center, Ternate Municipality. This study applied Randomized Control Trial design on groups of infants by administering supplementary foods in the form of biscuits as the control group and the by administering supplementary food made from *Moringa oleifera* as ingredients for the treatment group. Samples of this study consisted of 22 infants. Pre-analysis and Post-analysis on both treatment and control groups were conducted using t-samples independent test and Mann-Whitney u test. The results of this study indicated different consumption level of energy ($p=0,000$), protein ($p=0,002$) and Fe ($p=0,000$) before and after *Moringa oleifera* as mixed ingredient on supplementary food provision in the treatment group while in the control group there were different levels of energy and Fe consumptions before and after biscuit supplementary food provision. The level of energy consumption ($p=0,000$) and Fe consumption ($p=0,001$) while the level of protein intake showed no difference before and after biscuit supplementary food provision with values obtained ($p=0,441$). On the other hand, results of nutritional status measurement (z-score) showed that there were different z-scores before and after *Moringa oleifera* (as mixed ingredients) provision in the treatment group ($p=0,034$) while the control group showed no difference in z-score before and after biscuit food supplementary food provision ($p=0,705$). In terms of body weight, there was difference in weight before and after *Moringa oleifera* (as mixed ingredients) provision in the treatment group ($p=0,003$) while the control group showed that there was no difference in weight before and after biscuit provision ($p=0,780$). In terms of height, there was no difference before and after biscuit provision in the treatment group ($p=0,137$) as well as in the control group ($p=0,825$) while in terms of Hemoglobin contents, there was no difference in hemoglobin contents before and after biscuit food provision in the treatment group ($p=0,087$) as well as in the control group ($p=0,159$). Based on the findings above, it can be concluded that *Moringa oleifera* (as supplementary food ingredients) provision for 60 days might affect body weight and height, but not Hemoglobin contents while the provision of biscuit as supplementary food in the control group did not affect body weight, height and hemoglobin contents.

Keywords: *Biscuit Supplementary Food Provision, Moringa oleifera (as supplementary food ingredients) Supplementary Food Provision, Underweight Nutritional Status.*