ABSTRACT

Background

Stunting is a serious nutrition problem occurs as a result of chronic malnutrition. The prevalence of stunting under five years in Kenya was 26.0% in 2014. The possibility of recovery from stunting status (catch-up growth) after a critical period which the first two years of age is still controversial. This study conducted to confirm whether catch-up growth of children who stunted before has been achieved. Simultaneously, identification of the change of child nutritional status who not-stunted before was another objective. Also, the factors associated with the current prevalence of stunting and the change of stunting were examined in the present study.

Methods

In 2015, a Master of Public Health student, Nagasaki University, conducted a nutrition study. The subjects of this study were the same individuals (408 children) who participated in the 2015 survey. A structured interview was used to collect data. The study enrolled both caregivers and children. The outcome variable was child nutritional status focusing on stunting based on Height-for-age z score. To analyze data, a generalized linear model (GLM) was used to find a significant difference with the prevalence of stunting and the change of nutritional status. After the association with the prevalence of stunting were confirmed in each independent variable using univariable analyses, all significant variables were included in the GLM to build a full model (i.e. a logistic regression model). A backward stepwise method was used to select only necessary factors based on Akaike Information Criterion (AIC). Minimum AIC was considered as the best model. We set the p-value ≤ 0.05 as a significant difference. All the data were parsed using R and RStudio.

Results

In total, 204 children were followed up in this study. Another half of the participants were not able to be involved. The participated children ranged from 47 to 66 months of age. The number of stunting children reduced from 65 (31.9%) to 44 (21.6%) in the total target population. With respect to the change of nutritional status between 2015 and 2019: 22

became stunting from the normal range; 43 recovered from stunting; 117 maintained the normal range growth; 22 remained stunting. The rate of catch-up growth recorded by 66.2% (43 out of 65) in the same individuals.

In terms of factors relating to the current prevalence of stunting (N=204), logistic regression analysis revealed three factors with the significant association: the number of children under six years; livestock ownership; the nutritional status in 2015. The results showed having three or more children has a three times higher risk of child stunting than two or less (aOR:2.90, P=0.007). Moreover, the prevalence of stunting had a strong relationship with possessing livestock (aOR=4.36, P=0.049). However, the number of households with no livestock was small (31 out of 204 households).

With relation to the change of stunting status between 2015 and 2019 (N=65), child sex had a significant association. Male children improved their nutritional status over the years than female children (aOR=3.56, P=0.002).

Conclusion

Forty-three preschool children attained catch-up growth or recovered from stunting status. The factor associated with the change of child nutritional level was identified in sex difference. Nonetheless, further investigation is needed due to the limited samples. Also, fewer children in the household had a significant association with low prevalence of child stunting. Therefore, sharing the burden of caregivers and additional nutrition interventions focusing on older children, even though they remain stunted, are vital to mitigate child stunting prevalence in the community.