Quality of Food Intake using Dietary Diversity Score and its Association with the Nutritional Status of Filipino Children 6-23 months

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ABSTRACT

Background: Quality of food intake plays a vital role in achieving diet adequacy and in defining the nutritional status of children 6-23 months. Objectives: The study aimed to test the association between quality of food intake as measured by minimum dietary diversity score (MDDS) and nutritional status (underweight, stunting and wasting). Methods: This is a cross-sectional study using the infant feeding data of Filipino children aged 6-23 months (n=4276) from the country’s “2011 Updating Survey on the Nutritional Status of Filipino Children and Other Population Groups”. Each child’s recorded food intake the previous day were summed up and was classified as either meeting the MDDS (DDS ≥4) or not (DDS <4). Predictors associated with DDS in the bivariate analysis were included in the multiple regression analyses to determine the association of DDS with nutritional status. Results: The study showed that MDDS was associated with underweight and wasting but not with stunting. Meeting the MDDS was protective against underweight (OR = 0.80, 95% CI: 0.64 -1.00) and wasting (OR = 0.59, 95% CI:0.44 - 0.79). Aside from not meeting the MDDS, factors that increased the child’s odds to be underweight were child’s age at 9-11 months (OR = 1.83) and 12-23 months (OR = 2.17), household food insecurity (OR = 1.90) and mother working away from home (OR = 2.42). For wasting, household food insecurity (OR = 1.47) and mother working away from home (OR = 2.95) increased the probability of the child to be wasted. Conclusion and Recommendation: Quality of food intake in Filipino children 6-23 months was associated with underweight and wasting and a useful measure of diet diversity, diet quality and nutritional status. MDDS warrants further investigation as an assessment tool on food and nutrition security and in monitoring and evaluation of relevant food and nutrition policies and programs.

INTRODUCTION

Breastmilk alone can no longer satisfy a child’s requirement for energy and nutrients by the time the child reached the age of six months until two years old. Diet quality is crucial during this stage of rapid growth and development.

National nutrition surveys conducted in 2008 and 2011 showed a significant increase in the prevalence of underweight and stunting when the infant reached 6-11 months and doubled from the 0-5 months prevalence when the child reached two years old.

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OBJECTIVES

The study aimed to test the association between quality of food intake as measured by minimum dietary diversity score (MDDS) and nutritional status (underweight, stunting and wasting) of a representative sample of Filipino children aged 6-23 months and the possible associations between MDDS and selected child, maternal and household characteristics.

METHODS

A. Data Collection

- Conducted face-to-face interview on IYCF among mothers/caregivers of children 6-23 months
- Took anthropometric measurements of children
B. Data Analysis

- Added Dietary Diversity Score of each child’s food intake the previous day based on 24-hr food recall interview

- Classified each child’s DDS as meeting MDDS (DDS ≥ 4) or not meeting (DDS < 4)
✓ Performed bivariate analysis using Chi-square test on factors associated with DDS at the level of child, mother and household

✓ Tested factors associated with DDS in the bivariate analysis using multiple regression analysis.

RESULTS

A. PROFILE OF CHILDREN 6-23 MONTHS

Figure 1. By sex and by age
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**Figure 2.** By feeding practice

**Figure 3.** By primary caregiver
Figure 4. By nutritional status
B. SELECTED CHILD, MATERNAL AND HOUSEHOLD CHARACTERISTICS ASSOCIATED WITH DDS

1. Percentage of children 6-23 months meeting the Minimum Dietary Diversity by child characteristics

Figure 5. By age group
Figure 6. By feeding practice

Figure 7. By primary caregiver of the child
2. Percentage of children 6-23 months meeting the Minimum Dietary Diversity by maternal characteristics

![Fig. 8. By maternal parity](image1)

![Fig. 9. Work status](image2)

![Fig. 10. By workplace](image3)

![Fig. 11. By attendance to nutrition counseling](image4)

![Fig. 12. By knowledge on duration of exclusive breastfeeding](image5)

![Fig. 13. By knowledge on timing of complementary foods](image6)

3. Percentage of children, 6-23 months meeting the Minimum Dietary Diversity by household characteristics

![Fig. 14. By food security status](image7)

![Fig. 15. By household size](image8)

![Fig. 16. By area of residence](image9)

C. ASSOCIATION BETWEEN DDS AND UNDERWEIGHT, STUNTING AND WASTING

![Fig. 17. By underweight](image10)

![Fig. 18. By stunting](image11)

![Fig. 19. By thinness/wasting](image12)
D. MULTIPLE LOGISTIC REGRESSION MODEL OF STUNTING AND WASTING

### HIGHLIGHTS OF RESULTS

- Minimum Dietary Diversity was protective against underweight and wasting among children.

- Children aged 9-11 months and 12-23 months increased the child’s likelihood of being underweight by 1.83 times and 2.17 times, respectively.

- Feeding on other milk decreased the child’s odds of being underweight by 0.6 time.

- Children with mothers working away from home was 2.42 times as likely to be underweight and 2.95 times as likely to be thin.

- Mothers with 1-3 children only, not working, and who attended nutrition counseling decreased the child’s odds of being underweight. Mothers with only 1 child and not working decreased the child’s odds of being wasted.

- Food insecure household’s increased the child’s likelihood of being underweight by 1.90 times and wasted by 1.47 times.

- Households living in urban areas decreased the likelihood that the child will be underweight by 0.71 times and thin by 0.78 times.
CONCLUSION AND RECOMMENDATION

- MDDS was associated with the nutritional status of children 6-23 months and a useful measure of diet diversity and quality of food intake.
- MDDS warrants further investigation as a potential assessment tool in food and nutrition security surveillance systems and in monitoring and evaluation of relevant food and nutrition policies and programs.