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Food insecurity, nutritional anthropometry markers and risk of micronutrients deficiency in households of preschool children and women in rural communities of Osun, Nigeria

Introduction

Hidden hunger, stunting, wasting, and underweight among preschool children as well as low body mass index (BMI) among women of reproductive age (WRA) are still common forms of undernutrition in developing countries, especially in rural communities where household food insecurity is a burden. The co-existence of undernutrition and overnutrition is a recent twist of the problem in rural communities, resulting in a double burden of malnutrition. However, there is paucity of data on the magnitude of the double burden of malnutrition at the household and community level. This study investigated the overlap and discrepancy between anthropometric marker classification of preschool children and their mothers in rural communities of Osun State, Nigeria.

Methodology

A cross sectional survey of households involving preschool children age 36-59 months (n = 128) and their mothers (n = 90) was conducted in selected rural communities of the Ola-Oluwa Local Government Area of Osun state, Nigeria. Household food insecurity was assessed by household hunger scale. Body height and weight of preschool children and WRA (n=65) were measured, and for children expressed as height-for-age, weight-for-height and weight-for-age z-scores using WHO anthro software. Children with z-scores <-2 were classified as being stunted, wasted or underweight, respectively. BMI (kg/m2) values were calculated for WRA and categorized as underweight (BMI <18.5), normal weight (BMI 18.5-25), overweight (BMI 25-30) or obese (BMI >30). Venous blood samples of all children were taken to assess haemoglobin (Hb) concentrations, with anemia defined as Hb <110g/L). Risk for VAD among preschool children (n=97) was assessed by the frequency of consumption of vitamin A-rich foods, i.e. animal and plant sources or fortified food products, with a consumption frequency of $\leq4-6$ times/week indicating to be at risk (adapted HKI-FFQ). Statistical software was used for data analysis and level of significance was set at p<0.05.

Result

Average age of preschool children and WRA were 43 months and 33 years respectively. Moderate and little/no hunger households were 13.5% and 86.5% respectively. Among preschool children, 20.5% were stunted, 2.4% were wasted and 16.4% were underweight. Among WRA, 26.2% were underweight, 10.8% were overweight and 1.5% were obese. Mean Hb of preschool children was 98.96 g/L with 73.9% having anemia. Approximately 75% of the children were at risk for VAD. Though, 63% consumed vegetables (tomatoes, red sweet, chili, cherry peppers) and palm oil as a single dish > 6 times per week, less than one-fifth consumed green leafy vegetables > 6 times per week. Households with anemic children and overweight and/or obese mothers were 6.4% and 1.6% respectively. The relationship between household hunger and anthropometry markers of preschool children (height-for-age = -0.034, weight-for-height = -0.078 and weight-for-age = -0.089) and WRA (BMI = -0.177) were not significant.

Conclusion

Undernutrition in the form of stunting, wasting and underweight as well as risk for micronutrient deficiencies are still the primary nutritional problems among preschool children and their mothers in the studied communities. Although the double burden of malnutrition existed at the community level, it did not occur within the studied households.

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