

OW-015

Oral communication

Nutritional status and risk factors for malnutrition among preschool-age children in Sao Tome and Principe.

Silva D.^{1,2}, Valente A.², Dias C.³, Almeida F.⁴, Cruz JL.⁴, Neves E.⁵, Almeida MD.², Caldas-Afonso A.^{1,6}, Guerra A.^{1,2,6} and Study Group*

Unidade de Nutrição/Hospital Pediátrico Integrado/Centro Hospitalar São João¹, Faculdade de Ciências da Nutrição e Alimentação da UP², Serviço de Bioestatística e Informática Médica³, Hospital Dr Ayres de Menezes⁴, Instituto Marques de Valle Flor⁵, Faculdade de Medicina da UP⁶

Objectives: to assess the nutritional status as well as evaluate the risk factors that may contribute to malnutrition during infancy in a representative sample from Sao Tome and Principe.

Material and methods: 1285 children aged less than 5 years old were randomly selected from 24704 children enrolled in the vaccination program of 2010. Children's nutritional status was assessed by weight-for-length (≤ 24 months) and Body Mass Index (> 24 months); mothers nutritional status was determined using BMI, according to the World Health Organization. Birth weight was evaluated based on Olsen growth curves. Catch-up and catch-down growth were defined as a change in standard deviation scores of > 0.67 from birth to 2 years of age. Statistical analysis was performed with SPSS®, according to the total sample and by age groups. The study was approved by Ethics Committee of Hospital Dr. Ayres Menezes and Centro Hospitalar São João.

Results: Of the 1285 children, 45.5% were male and the median age 22 months. A high percentage (30%) of malnutrition was observed in the youngest children (0-24 months) vs 22% of the older (>24 months). In children older than 12 months there is a lower risk of malnutrition associated with BMI (≥ 25 kg/m²) [OR=0.476 (0.234-0.968)] ($p=0.04$) and maternal education (> 10 years) [OR=0.448 (0.244-0.825)] ($p=0.01$). Likewise, it is observed a lower risk of malnutrition in children with adequate birth weight [OR=0.485 (0.299-0.785)] ($p=0.003$) and catch-up growth in the first half of life [OR=0.261 (0.148-0.461)] ($p<0.001$), whereas mother pregnancies (≥ 4) negatively influences the nutritional status [OR=1.610 (1.004-2.582)] ($p=0.004$). At 24 months, only the high educational level of the mother (> 10 years) [OR=0.186 (0.064-0.540)] ($p=0.002$) and the catch-up growth in the first 6 months [OR=0.282 (0.133-0.596)] ($p=0.001$) showed a protective effect against malnutrition. On the contrary, mother's number of pregnancies (≥ 4) [OR=2.428 (1.348-4.373)] ($p=0.003$) and the number of siblings (> 1 brother) [OR=1.537 (1.025-2.303)] ($p=0.038$) increase the risk of malnutrition of children at 24 months.

Key findings: The high prevalence of malnutrition observed in the study population seems to be related to social indicators and nutritional markers of the mother. We emphasized the huge importance of mothers information/education, with priority intervention in pregnancy.

OW-016

Oral communication

Is dietary diversity associated with biomarkers of micronutrient status among non-pregnant adolescent Mozambican girls in two different seasons?

Korkalo L.¹, Erkkola M.¹, Heinonen A.¹, Freese R.¹, Selvester K.², Mutanen M.¹

¹Department of Food and Environmental Sciences, Division of Nutrition, University of Helsinki, Finland. ²Food Security and Nutrition Association (ANSA), Mozambique

Objectives: Studies in low-income settings have shown that dietary diversity scores (DDSs) are positively associated with micronutrient adequacy of diets. Less is known about whether different DDSs could be used as proxy tools to assess the risk of micronutrient deficiencies on a population level. We studied whether one of the dietary diversity tools proposed by FAO, the Women's Dietary Diversity Score (WDDS), is associated with low concentrations of haemoglobin, serum ferritin, zinc, and folate, and plasma retinol among 14- 19-year-old non-pregnant Mozambican girls.

Materials and methods: We used data from the ZANE Study (Estudo do Estado Nutricional e da Dieta em Raparigas Adolescentes na Zambézia). The data were collected cross-sectionally in different regions of Zambézia Province in 2010. Non-pregnant participants with a venous blood sample and 24-hour dietary recall data ($n=225$ in January- February and $n=220$ in May-June) were included in the analysis. We constructed the WDDS consisting of nine food groups from 24-hour dietary recall data.

We performed logistic regression analyses stratified by season to examine associations between low (≤ 3), and medium/high (≥ 4 food groups) WDDS and low blood concentrations (the lowest quartile in each season). An asset score was created by assigning scores for type of housing and possession of household items, animals and land. Sampling weights were used.

Results: In January-February, a low WDDS was associated with a higher odds of having low serum zinc, compared with a medium/high WDDS. This association remained significant after adjusting for region, age, breastfeeding, BMI-for-age, elevated high-sensitivity C-reactive protein, asset score, and literacy (adjusted odds ratio: 3.35, 95% confidence interval: 1.41-7.94; $n=221$). No other significant associations were found for either of the seasons.

Key findings: Although we found modest evidence that this simple tool could be used to predict low serum zinc, the finding was not consistent in both seasons. WDDS was not a predictor of low haemoglobin, iron depletion, or low vitamin A or folate status. As a tool, the score might be too simple to capture the different qualities of diets that may predict micronutrient status. Moreover, micronutrient status is affected by factors other than the diet, some of which we may not have been able to control for. Small samples sizes may have precluded us from finding some associations. Our data from Mozambique provides very little evidence supporting the idea that WDDS could be used to assess low micronutrient status when used in a cross-sectional manner.

OW-017

Oral communication

Community health workers prevent harmful infant feeding and caring practices among mothers of children under 2 in Palestine.

Al Rabadi H.

World Vision Jerusalem -West Bank -Gaza

Objective: Infant and young child feeding practices are critically important for children's survival growth and development. Sub-optimal feeding practices, inappropriate feeding during illness, low supplements intake and poor newborn caring practices are known to be prevalent in Bethlehem villages.

The objective of this intervention is to assess the effectiveness of home targeted and timely visits by trained community health workers (CHWs) for increased knowledge and improved practices among caregivers.

Methods and Materials: An intervention study was carried out by World Vision in eleven villages surrounding Bethlehem. Mothers ($n=360$) of infants born during the year 2011, 2012 were identified by 17 trained CHWs. The CHWs targeted the mothers with key messages and support for positive infant and young child feeding practices during organized home-visits throughout 14 months. Baseline and end-line data were collected through household interviews.

Results: Infant and young child feeding practices were significantly improved after the intervention; exclusive breastfeeding until 6 months increased from 44.7% to 65.7% ($P<0.001$), duration of breastfeeding above one year increased from 66.8% to 82.5% ($P<0.001$), timely introduction of the complementary meals increased from 71.5% to 87%, offering the minimum meal diversity increased from 28.5% to 78.9% ($P<0.001$), meal frequency increased from 4.2%-75.9% ($P<0.001$), giving the appropriate feeding during illness increased from 40.7% to 76% ($P<0.001$), giving regular VIT A supplements increased from 44.6% to 75.6% ($P<0.001$) and giving regular iron supplementation increased from 38.8% to 76.7% ($P<0.001$). As per the new born caring practices ;bathing newborns within 24 hours after birth decreased from 65.1% to 34.9% (P value <0.001); harmful massage practice decreased from 25.8% to 5% (P value <0.001); putting salt on babies' skin and cord decreased from 41.8% to 11.1% (P value <0.001), tight wrapping decreased from 61.2% to 25.8% (P value <0.001); recognizing infants' danger signs and timely referral for health care increased from 26% to 77.8% (P value <0.001).

Key findings: Home based interventions by trained community health workers have positively influenced different practices related to infant and young child feeding, feeding during illness supplements intake and newborn caring practices in Bethlehem villages. Due to context similarities in most Palestinian localities scale up plans for this intervention, integrated with early childhood stimulation component, is envisioned.

OW-018

Oral communication

Nutritional Status of Primary Schools Children in the Oio and Cacheu Region in Guinea-Bissau.

Schlössman N.^{1,2}, Batra P.², Balan E.³, Coglianese N.¹, Wood L.¹, Santos MV.¹, Pruzensky W.³, Saltzman E.², Roberts SB.²

¹Global Food & Nutrition Inc. ²Tufts University. ³International partnership for Human Development.

To date, there has been no survey of nutrition status among primary school children in Guinea-Bissau. To fill this gap and in preparation for a Randomized Control Trial to improve nutrition in the population, we assessed anthropometry and anemia in 4,807 children in two rural areas: Cacheu and Oio. This research was funded by the United States Department of Agriculture (USDA) Micronutrient Fortified Food Aid Pilot Project and took place in primary schools participating in a Food for Education program run by International Partnership for Human Development.

Methods: Student's weight in light clothing and no shoes was measured using a portable digital scale (Seca model 813) placed on a flat surface and calibrated at regular intervals. Standing height was measured without shoes using a portable stadiometer (Seca model 213). Hemoglobin was analyzed by Hemocue™ from finger stick blood samples. WHO cut-offs for Weight-for-Age Z-scores (WAZ), Height-for-Age Z-scores (HAZ), BMI-for-age Z-score (BAZ), and Hemoglobin (Hb) concentration were used for analysis.

Results: Nutrition status of children in primary school (2,163 girls and 2,647