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Abstracts of Original Communications

BODY COMPOSITION, WORKER PRODUCTIVITY AND DIFFERENT WORK AVAILABILITY. M D C Immink,* R Flores, F E Viteri and P Sibrián. Institute of Nutrition of Central America and Panama, Guatemala, and Pan American Health Organization, Washington, D.C. 20037

Objective: Determine whether body composition of rural workers constitutes a limiting factor in their productivity responses to different work availability situations. Hypothesis: Changes in work availability situations produce different productivity adjustments between workers with different body composition. Methods: The same 56 Guatemalan sugarcane cutters were measured thrice at 2 months' intervals during a harvest season, each point representing a different work availability situation. Daily tonnage of sugarcane cut (DQC), days worked/fortnight (DWF) and earnings/fortnight (YF) were the productivity indicators used. Body composition was measured with anthropometric measurements: arm muscle circumference (AMC) and mean of 4 skinfolds (SKINF). Analysis of variance of repeated measurements in time was applied. Findings: a) No significant differences in DQC, DWF and YF between workers with different body composition; b) mean productivity levels differed significantly between periods; c) the changes in DQC, DWF and YF between periods were equal among groups of workers with different body composition; d) the changes in AMC and SKINF between periods were equal among workers with different first period body composition. Conclusions: Changes in work availability situations did not interact with differences in the body composition of these workers to produce different adjustments in their productivity.

THE EFFECT OF VARYING THE FREQUENCY OF HOME VISITS ON THE DEVELOPMENT AND NUTRITIONAL STATUS OF POOR URBAN CHILDREN. C. Powell * and S.M. Grantham-McGregor. Tropical Metabolism Research Unit, University of the West Indies, Kingston, JAMAICA.

The relative effectiveness of different frequencies of home visiting on the developmental levels (DQs) and nutritional status of poor urban children, aged 6-30 months, was evaluated. A low cost home visiting programme was carried out by Community Health Aides (CHAs) based at a primary health care clinic in a poor neighbourhood. During one-hour visits, the CHAs demonstrated the use of home-made toys and gave the customary Ministry of Health advice on nutrition and health care. Four groups of children were visited either weekly, biweekly, monthly or not at all. Before and after one year's intervention, the children's DQs were assessed on the Griffiths Mental Development Scales and weights and heights measured. Monthly visited children showed a non-significant improvement of 3 points, whereas fortnightly and weekly improved significantly compared with the controls, 6 and 11 points respectively. Nutritional advice had no impact on the children's heights and weights. We concluded that DQs improved proportionately to the frequency of visiting and that visiting all poor children with minimal inputs may not be justified. Where resources are limited, it is probably more useful to visit at least biweekly and target high risk children only. The failure of improvement on the children's nutritional status suggests that current government nutritional services need to be reassessed.

PSYCHOMOTOR DEVELOPMENT OF UNDERNOURISHED CHILDREN. A Casal, M Cobas*, A Damiani and I Fernández. Institute of Nutrition and Food Hygiene. La Habana, Cuba.

The psychomotor development of fifteen undernourished children admitted at the Service of Clinical Nutrition was studied. Nutritional assessment of the children was carried out according to Waterlow based on Harvard Standards and the psychomotor development was assessed by means of the Brunette Lezine Test. Both studies were made at admission, at discharge upon recovery and six months later. A survey including psychosocial aspects was also carried out. The control group comprised 15 healthy children of the same age and sex. Significant differences were found in the undernourished group of children between the first and last evaluation using Freadman's non parametric test for the results of the Brunette Lezine test while there were no differences in the control group.

THE EFFECT OF EARLY UNDERNUTRITION AND REHABILITATION ON MOUSE BRAIN DEVELOPMENT. Akira Yoshida*, Hiroshi Yoshioka, Masaharu Ochi, and Tomoichi Kusunoki
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This study was undertaken to investigate the effect of early undernutrition and rehabilitation on the kinetics of neuronal proliferation and dendritic development.
Controls; nursed in litters of 6. M1-20; nursed in litters of 18 from birth until weaning. M1-10; nursed in litters of 18 from birth to 10 days and thereafter in litters of 6 . M1-5; nursed in litters of 18 for 5 days.
Although the brain weight of M1-5 had caught up with that of controls, that of M1-10 was between those of controls and M1-10 at 120 days. The generation time of the cerebellar external matrix cells of 10-day-old mice was 15.5 hours in controls and 18 hours in M1-10 and M1-20. That of 15-day-old mice was 16.5 hours in ML-10 and controls, and 20.5 hours in M1-20. The granule cell number in M1-20 and M1-10 counted at 30 days was significantly less than that in controls. The number of longer dendrites of the pyramidal cells in the neocortex was reduced in M1-10 and M1-20 at 60 days.
It is concluded that the brain weight, granule cell number and dendritic development are influenced by undernutrition for 10 days or more from birth in the mouse.

NUTRITIONAL OUTCOMES OF A MASSIVE FEEDING PROGRAMME IN TAMIL NADU R.P. Devadas. Sri Avinashilingam Home Science College for Women Coimbatore 641 043, India

The Hon'ble Chief Minister's Nutritious Meal Programme was started in the State of Tamil Nadu on 1st July 1982 for providing a nutritious square meal a day for 365 days of the year. The programme benefits over 8.5 million children in the 2 + to 14 + age group in 27,897 child welfare centres, 34,084 primary school centres and 8,925 high school feeding centres of the state. The meal consists of 80 to 120 g cereals, 10 to 20 g pulses, 3 g oil, 25 g leafy vegetables and 25 g other vegetables, providing 400 kcal and 10 g protein for the preschool child, 510 kcal and 12 g protein for the school child and 600 kcal and 16 g protein for the high school child.

The evaluation of the programme over a period of two years show that the body measurements namely heights and weights, initial and final clinical picture and the blood haemoglobin levels had improved remarkably for the experimental children when compared against the comparable controls who did not participate in the programme. The cognitive development of children, their nutrition knowledge and food habits also increased to an appreciable extent. The opinion of the parents, teachers and children regarding the programme revealed that it is a boon to the under previleged, with bright future for a healthy and happy generation.

NUTRITIONAL PROFILES OF CHILDREN GIVEN EARLY NUTRITION INTERVENTION- A FOLLOW UP OVER EIGHT YEARS. R.P. Devadas*, U.Chandrasekhar* and N. Bhooma. Sri Avinashilingam Home Science College, Coimbatore 641 043, India.

Specific objective of the present investigation was to assess the nutritional profiles of children fed improved rice based and ragi based local diets. Devadas et al (1973,1976,1977) had formulated and evaluated local rural diets by enhancing its nutritional value by inclusion of low cost locally available foods like sweet potato, horsegram, sesame, groundnuts, amaranthus and other locally available greenleafy vegetables. Two most promising combinations thus evaluated - with rice and ragi as basic ingredients were selected for the study and fed to a group of 25 expectant women each followed through their pregnancy and lactation and their infants studied up to their school group age. Simultaneously the same diets were given to a group of 25 pre school children each followed up to their school going age. For both the age groups studied an unsupplemented group with similar socio economic background served as the control. Results indicate that the improved local ragi based and rice based diets had greater nutritional potential. It gave a better start in life for the infants studied from their birth and improved the nutritional profiles of the children who were studied from their preschool age. The growth pattern of the children interms of their increments in heights and weights as followed over a period of eight years shows that they are better when compared with their counterparts in the control group.