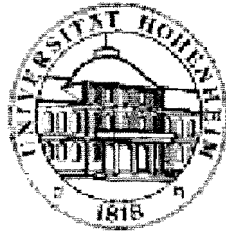


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**Prevalence and Causes of Malnutrition
in Urban and Rural Areas
of Harari National Regional State, Ethiopia**

- A community based study -

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7. Summary

The objectives of this randomised cross-sectional study in Harari National Regional State were:

- to establish figures for the prevalence of different types and degrees of malnutrition in the region;
- to ascertain specific risk factors for the development of malnutrition in urban and rural areas by assessing the main differences in family background, individual variables, child-care and child-feeding practices and dietary intake between the children in the two different environments;
- to consider relevant information about specific causes of malnutrition in order to give practical, culturally sensitive recommendations on how to prevent malnutrition and how to improve the nutritional situation of the children in the study area.

The target group were children under five years of age who had already started eating complementary food at the time of the survey. 6 out of the 19 urban administrative districts (Kebeles) and 6 out of the 17 rural administrative districts (Peasant Associations) were randomly selected for data collection. Structured interviews were conducted with 411 randomly selected mothers or care-takers for one of the children under five under their direct care in the chosen areas using a pre-tested questionnaire. General data about the child, including family background, health status of the child, breastfeeding, complementary feeding and childcare practices were collected. To assess the dietary intake of the selected child, a structured pre-tested 24-hour recall was conducted. In addition, the child's weight, length and mid-upper-arm circumference (MUAC) were measured. Further in-depth information was collected through key informant interviews and focus group discussions.

The nutritional status of rural children was significantly worse than the one of urban children, indicated by a significantly lower mean WAZ, HAZ and WHZ and by a significantly higher percentage of underweight (WAZ < -2 SD), stunted (HAZ < -2 SD) and wasted (WHZ < -2 SD) children. A significant difference was noted between rural areas on the one hand and urban areas on the other. The rural area accounted for a higher number of children per family, a higher rate of morbidity among children under five, lower amount of time available to the mother for child-care, a higher percentage of illiterate mothers, a higher percentage of households suffering from food shortage, a higher percentage of new-borns receiving pre-lacteal feeding and a lower number of

meals given to children who were no longer breastfed at the time of the interview. These factors very likely contributed to the higher prevalence of the above-mentioned types of malnutrition. The focus group discussions revealed that some childcare, health-seeking and hygiene practices which were based on traditional lifestyles and views in the rural area were less conducive to child health than those in town. On the other hand, significantly less mothers in the rural area were discharging colostrum and the total duration of breastfeeding was significantly longer in comparison to town. Possible risk groups for malnutrition in Harar town are children of single-parent mothers.

More boys were suffering from severe stunting and underweight whereas more girls were more affected by severe wasting and had a higher prevalence of MUAC < 12.5 cm.

There was a higher though not significantly different prevalence of kwashiorkor in the rural (0 – 11.1%) than in the urban (0 – 5.6%) areas, and clearly more girls (4.1%) as opposed to boys (2.6%) were suffering from this condition. This is in contradiction to admission data from health facilities in HNRS that registered a higher proportion of boys than girls as patients over the last three years. The finding might indicate that parents consider it more important to seek medical care for boys than for girls.

For all indicators of nutritional status (WAZ, HAZ, WHZ, MUAC, oedema) there was a large variation within the urban (Kebeles) and rural (PAs) districts respectively.

As for the diet, both urban and rural children were deficient of energy and some nutrients. On average, all children had an insufficient energy intake. The average energy intake was stagnant from 12 to 47.9 months and only rose during the 5th year of life. As for the macronutrients, the intake of carbohydrates was high enough and the contribution of carbohydrates to total energy intake exceeded the recommended range for rural children. The high contribution of carbohydrates was due to the lacking of calories from fat. Fat intake was insufficient for all children (10% of total energy in rural children and 24% in urban children; recommended range 30-40% for children up to two years of age) and significantly lower for rural children. The protein requirements were met by all children, but the quality of protein was lower in the rural area, because it relied more heavily on incomplete plant protein, mainly from cereals. A deficiency in some essential amino acids is therefore likely in rural children.

The fulfilment of vitamin C- and calcium requirements was significantly higher in town while the fulfilment of vitamin B2-, phosphorus- and zinc-requirements was significantly higher in the rural area. On average, none of the children met their needs for

calcium ($\leq 64\%$), phosphorus ($\leq 95\%$), potassium ($\leq 98\%$) and zinc ($\leq 92\%$). Vitamin A and vitamin C intake were marginal for the children from 12 – 25.9 months in the rural area.

It is very likely that these energy and nutrient deficiencies contribute overall to the insufficient nutritional status of the children, but how exactly and to which extent remains to be investigated.

Most of the above mentioned nutrient deficiencies could be alleviated by two strategies: increasing the use of linseeds and other oilseeds in the children's diet and adding more fruits and vegetables particularly to the diet of younger children.

Furthermore, information on the following topics might be helpful to improve the mothers' care-practices:

- Breastfeeding and complementary feeding practice
- Energy and nutrient requirements of young children
- Food safety principles
- Visual signs of poor and normal growth
- Prevention, symptoms and treatment (equally for boys and girls, preferably at a health facility and as soon as possible) of the most common childhood diseases
- Recognition of early signs of severe malnutrition, e.g. hair changes, skin alterations, lack of appetite, aetiology and prevention of severe forms of malnutrition
- Prevention, symptoms and treatment (equally for boys and girls, preferably at a health facility and as soon as possible) of the most common childhood diseases

Care should be taken not only to pass on knowledge, but also to help mothers appreciate the new practices and to teach them how to translate their knowledge into practice. Traditional knowledge and practices should be incorporated as far as possible.