Management of Malnutrition in Rural Mali

Summary

In Mali, according to DHS III (Demographic and Health Survey) in 2001, the global rate of malnutrition (weight for age <2 sd) among under-five children was 38%. The purpose of this study was to assess the management of malnutrition in children (0–59 months old) by the professionals in the intervention areas of ‘Strategy for Accelerated Child Survival and Growth’, according to IMCI guidelines. We carried out a cross-sectional survey in three randomly selected health districts (Kolokani, Niono and Koro) and involved 27 health centres, 180 children and 180 mothers. We did direct observation of consultations and interrogated the mothers.

The study found that the equipment and tools necessary for nutritional status assessment were available but seldom used in practice. Nutrition training was provided only to the health staff of Kolokani where 78% of the staff were trained in IMCI and 55% in IEC (Information Education and Communication). The indicator weight-for-age was used to assess nutritional status of 64% children in Kolokani vs. 42% in Koro and 4% in Niono. IMCI classification was used only in Kolokani (57% of children). The management of severe malnutrition in children was more correct in Kolokani (100%) than in Koro (33%) and Niono (0%). Twenty-eight percent of mothers/caretakers knew the appropriate duration of exclusive breastfeeding, but only 5% knew that vitamin A supplementation should be done every 6 months.

Our findings suggest that nutritional status assessment is performed better in the health districts where staffs are training in IMCI. We recommend training the health staff in the other health districts and the intensification of behaviour change communication for mothers.

Key words: children, management, malnutrition, rural, Mali

In developing countries as much as 70% of under-five mortality is due to five conditions: diarrhoeal diseases, acute respiratory infections, malnutrition, malaria, and measles [1]. In Mali, the overall malnutrition rate (weight for age <2 sd) among under-five children is 38%. To reduce childhood mortality, UNICEF and the Mali ministry of health initiated in 2001 a program known as ‘Strategy for Accelerated Child Survival and Growth’ implemented in six health districts (Kolokani, Banamba, Bla, Niono, Djenné and Koro). The purpose of this study was to assess the management of malnutrition in children (0–59 months old) by the health professionals in intervention areas, according to IMCI guideline.

We carried out a cross-sectional survey in three randomly selected health districts (Kolokani, Niono and Koro) and involved 27 health centres, 180 children and 180 mothers. We did direct observation of consultations and interrogated the mothers.

The study found that the equipment and tools necessary for nutritional status assessment were available but seldom used in practice. Nutrition training was provided only to the health staff of Kolokani, where 78% of the staff were trained in IMCI and 55% in IEC (Information Education and Communication). The indicator weight-for-age was used to assess the nutritional status of 64% children in Kolokani vs. 42% in Koro and 4% in Niono. IMCI classification was used only in Kolokani (57% of children). The health staff of Kolokani looked for signs of kwashiorkor in 42% of the children vs. 12% in Koro and 2% in Niono. The management of severe malnutrition in children was more correct in Kolokani (100%) than in Koro (33%) and Niono (0%). Twenty-eight percent of mothers/caretakers knew the appropriate duration of exclusive breastfeeding, but only 5% knew that vitamin A supplementation should be done every 6 months.

Only the health staff of Kolokani had received nutrition training. A similar lack of nutrition status has been reported among nurses in Burkina Faso [1]. In Ivory Coast, Houenou, et al. [2] found that 32% of children had low weight-for-age but only 2% were diagnosed by the health staff as being malnourished.

Nutritional status assessment is neglected not because of lack of working tools but because of a lack of training and ignorance about the importance of malnutrition. Our findings suggest that nutritional status assessment is performed better in health districts where staffs are trained in IMCI. We recommend training the health staff in the other health districts and the intensification of behavioural change communication for mothers.

TOUMANI SIDIBÉ, a HAMADOUN SANGHO, a MARIAM SYLLA TRAORE, b FATOUMATA I. KONATÉ, c HAOUA D. KEITA, a BAYE DIAKITÉ, a HADIZATOU COULIBALY, b and Broulaye Traoré b

aCentre for Research and Documentation on Child Survival (CREDOS), Bamako, Mali, Mali.
Overweight and Obesity in Nigerian Preschool Children

As a result of improvement in living standard and changing lifestyles, the problem of obesity appears to be evolving in the developing part of the world [1]. In Nigeria, Owa and Adejuyigbe [2] recorded a prevalence of 18% among school age children. Increasing evidence shows that moderate number of these obese children will also grow up as obese adult with the risk of attending complications such as hypertension, Angina pectoris, non-insulin-dependent diabetes mellitus (NIDDM) and hypercholes terolemia [3]. It is therefore very important to screen for obesity in childhood so that an early intervention and prevention of the disorder can be made.

A study was conducted using the multistage cluster sampling technique in Ifewara, a rural community in Osun State, Nigeria. Using the estimated prevalence of obesity of 18% by Owa and Adejuyigbe [2], the minimum sample size (n) for the study was calculated as follows:

\[ n = \frac{z^2p(1-p)}{d^2} \]

where: 'z' is the critical value and in a two-tailed test it is equal to 1.96, 'p' is the estimated prevalence of obesity, 'd' is the absolute sampling error that can be tolerated. In this study, it was fixed at 5%.

Therefore, the minimum sample size: \( n = 1.96^2 \times 0.18 \times (1 - 0.18)/0.05^2 = 226.8. \)

The anthropometric parameters of every child were recorded. Body mass index (BMI) > 85th percentile and > 95th percentile was taken as the criteria to identify overweight and obesity, respectively [4]. Children below the 5th percentile for age and sex are classified as underweight [4].

A total of 270 children were studied. The mean age of the study population was 41.7 ± 10.1 months. Boys had higher weight than girls and the difference was statistically significant \( (t = 2.455, p = 0.015) \). However, there was no statistically significant difference in the height, BMI and BMI percentile of boys and girls \( (p > 0.05) \). The mean value for Mid-upper Arm Circumference and Triceps Skin fold thickness were 14.6 ± 0.96 (95% CI 14.5–14.7) and 7.58 ± 1.62 (95% CI 7.38–7.78), respectively. Comparison of means of the sexes was not statistically significant (Table 1).

Of the children, 37 (13.7%) and 14 (5.2%) were overweight and obese, respectively, while 23 (8.5%) were underweight. There were no significant differences in the prevalence of overweight and obesity between boys and girls \( (p > 0.05) \). Similarly, there were no significant differences in the prevalence of overweight and obesity between the different age groups \( (p > 0.05) \). This study identified the prevalence of overweight and obesity in this rural community among the preschool age children to be 13.7 and 5.2%, respectively. This is similar to the prevalence of obesity of 8.2% for children from Kuwait [5]. However, it is lower than the prevalence of overweight or obesity of 25.6% for children from Canada [6] and prevalence of obesity of 32% for the same age group of children from USA [5]. This population shows heterogeneity in their nutritional problem by having mixture of obesity and underweight. This is in contradiction to the World Health Organization report that the developing countries have low prevalence of obesity with high prevalence of malnutrition [7]. With improvement in the standard of living of this people, there may be an increase in the prevalence of obesity and rise in the associated morbidities. These will not augur well for a developing nation that has infectious diseases and malnutrition to contend with. Larger prospective study will be needed to identify the risk factors for obesity in this age group of children.

I. O. SENBANJO
Department of Paediatrics and Child Health, Igbinedion University Teaching Hospital, Okada, Edo State, Nigeria

References