

Management of Acute Malnutrition in Infants aged <6 months (MAMI): Improving the evidence underlying new WHO Malnutrition Guidelines- Where we are now?

Undernutrition is responsible for 45% of all under five child deaths¹. Keeping this in mind, Community-based Management of Acute Malnutrition (CMAM) has made an attempt to reform the approach in managing SAM (Severe Acute Malnutrition) and MAM (Moderate Acute Malnutrition)^{2,3}. While this focuses on children of 6-59 months age, some 4 million severely wasted infants aged <6 months are currently being neglected^{4,5}. Considering younger infants are at a greater health risk⁶, the recent WHO Guideline recommends management of uncomplicated infants <6m in the community⁷. But there is not enough knowledge on how to implement the guideline to adopt it within the national policies⁷.

Save the Children along with ENN, LSHTM and KEMRI aimed to address this research gap by a. estimating the prevalence of SAM and MAM amongst infants <6m, b. identifying the associated risk factors and c. exploring the outcomes of current in-patient approach of care. People's perception about severe acute malnutrition and its management was also explored qualitatively. With support from Margaret A. Cargill (MAC) Foundation, this MAMI research was conducted in Barisal Sadar, a southern sub-district of Bangladesh. Two anthropometric prevalence surveys (pre and post-harvest) were conducted among 742 infants of <6m. At the same time 77 sex-matched 4-8 week-old infants of two groups were prospectively followed; SAM [weight-for-length Z-score (WLZ) <-3 and/or bipedal oedema] and Non-SAM, [WLZ \geq -2 to <2, no oedema, mid-upper-arm circumference (MUAC) \geq 125 mm]. The infant's nutritional and clinical status were re-assessed at the age of 6 months.

Prevalence of SAM was found to be 5.9% pre-harvest and 0.8% post-harvest and MAM was 2.4% and 4.2% respectively. Infants with SAM were younger (5.1 ± 1.2 vs. 6.5 ± 1.2 weeks, $p=0.001$). Their duration of exclusive breastfeeding was shorter both at enrolment (3.9 ± 2.1 vs. 5.7 ± 2.2 weeks, $p<0.0001$) and at 6 months end-line (13.2 ± 8.9 vs. 17.4 ± 7.9 weeks; $p=0.003$). Maternal education, satisfaction with breastfeeding and household electricity were also associated with SAM at baseline. With minimal treatment, 18(23%) infants in SAM group still had SAM at 6 months vs only 1(1%) in non-SAM control. They were also found to be significantly thinner (mean WLZ -1.28 ± 1.3 vs 0.16 ± 1.0 , $p=0.001$) and more stunted (mean HAZ -2.57 ± 1.4 vs. -1.14 ± 0.8 , $p=0.0010$) at end-line. At the end, three (4%) among the SAM group and none in the control group died. It shows that breastfeeding alone may not be protective, rather SAM in this age group warrants package of care targeting both mother and infant. Qualitative interviews and FGDs conducted with caregivers of infants <6m and associated health workers revealed that malnutrition among infants under 6m of age is perceived as common health problem but inaccessible to quality care. They were found to associating quality of malnutrition services with the inpatient care only. However, they also preferred community based care especially for easy accessibility and low cost. Findings suggested that there is a lack of a community based and context sensitive model for malnutrition care in this early age group and such model may demand involvement of different community groups; i.e, leaders, mothers, health workers.

Based on this, ENN, LSHTM and Save the Children have recently developed Community-MAMI tool⁸. The C-MAMI tool is structured in a way so that it can be added to the existing Integrated Management of Childhood Illnesses (IMCI) model⁹ and also can focus on both infant and mother. However it is essential to pilot this tool in multiple settings. Save the Children will soon pilot this tool in Bangladesh and Myanmar to test early detection and effective management of SAM in infants <6m with acute malnutrition in the community. In addition, feasibility to operationalize this C-MAMI will also be tested globally using DHS data. This will explore the use of different indicators of nutritional vulnerability. It will assess the strength of association between weight-for-age vs weight-for-length in infants and establish which is more strongly associated with biologically plausible risk factors (e.g. poor breastfeeding). This data will further inform case definition decisions and potentially improve case screening in community settings.

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