Preventing Acute Malnutrition in Young Children: Improving the Evidence for Current and Future Practice

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Acute malnutrition (wasting and/or kwashiorkor) is a major global public health problem. Over 52 million children worldwide have wasting, 875,000 deaths per year in children aged 1–59 months are attributable to wasting; of those, 516,000 are attributable to severe wasting [1]. The need to act is clear, but the evidence base is sparse [2,3]. Evidence is particularly lacking for prevention of acute malnutrition [4]. Therefore, the study by Langendorf and colleagues in this week’s issue of PLOS Medicine exploring the effectiveness of different strategies to prevent malnutrition in young children is both timely and important [5].

A Pragmatic Study in a Challenging Setting

Langendorf and colleagues divided 48 rural villages in Niger into seven groups to test seven interventions [5]. Allocation was partly random, partly pragmatic. One group received cash. Three groups received cash plus different food supplements specially designed for supplementary feeding of children. One group received supplementary food and a family food ration, and two groups received the food supplements only. The primary outcome was incidence of severe acute malnutrition (SAM) and moderate acute malnutrition (MAM); 5,395 children (615–1,054 per group) were enrolled using length as a proxy for age between 6–23 months. Key findings included:

- The lowest incidences of acute malnutrition were found in the groups receiving both supplementary food and cash.
- The highest incidence of MAM was observed in the group receiving only cash, and the highest incidence of SAM was in a group receiving only supplementary food.
- Risks of malnutrition were significantly greater in several of the single-intervention groups versus the combined-intervention groups, whether the single intervention was cash or supplementary food for children.

Why the Study Matters and Its Strengths and Limitations

Implementing any large-scale trial, let alone in an emergency setting, entails major practical, political, and other types of challenges. The achievements of the study team in successfully executing their project should be applauded. As well as being one of the first of its kind, the study has many methodological strengths, including rigorous and detailed reporting and analysis. However, there are also limitations. Whilst the number of individual children involved is impressive and the use of (some) randomization and control groups is notable, this is not a randomised controlled trial or even a cluster randomised trial. Each of the seven interventions were implemented only once in each of the seven study village groups. Follow-up duration was limited, and methodologically, the trial is more akin to an observational study: rather than proving the relative effectiveness of the various interventions, findings could equally be due to inter-site differences resulting in bias or unmeasured confounding. These limitations are acknowledged by the authors, who correctly argue that “some designs may not be possible despite their explanatory benefits.” This in no way diminishes the study’s importance. Prior to this study, there were all kinds of reasons to justify cash-alone interventions, food-alone interventions, or both combined in particular contexts. All could be reasonably advocated. All still

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