ABSTRACT

Objective: The Micronutrient Initiative and academic partners have designed two program impact evaluations of Infant and Young Child Nutrition (IYCN) interventions in Ethiopia and Burkina Faso. The programs include enhanced behavioral change interventions on IYCN, improved quality of local complementary feeding, provision of Multiple Micronutrient Powders (MNPts) to children 6 to 23 months, and ensuring an integrated preventive and community-based management of moderate acute malnutrition.

The objective is to critically review key elements for consideration in the design of future IYCN program evaluations.

Methods: Evaluation designs were based on 1) selection of primary and secondary outcome indicators based on the Program Impact Pathways (PIPs), 2) considerations for assignment of intervention and comparison groups, and 3) considerations on designs in the context of integrated programs.

Results: Following PIP, both impact and process indicators were identified. In Ethiopia, a matched-control cluster design and in Burkina Faso a cluster randomized matched-control design was used with repeated cross-sectional surveys. Sample size calculations took into account the selection of age-appropriate cohorts for the different impact indicators, and a population-based sampling scheme. Following recent discussions around the safety of iron-containing supplements in young children without iron deficiency, the evaluations also included practical methods to assess potential adverse events in programme settings.

Conclusions: The complexity of measuring impact on child nutrition in an integrated programmatic context is often underestimated, leading to evaluations with inconclusive results or impacts that are difficult to attribute to program. Careful design could help avoid such pitfalls.

METHODS

Evaluation designs were based on:
1. Selection of primary and secondary outcome indicators based on the program impact pathways (PIPs), following a theory of change that was defined for both projects.
2. Considerations for assignment of intervention and comparison groups. Randomized or quasi-experimental.
3. Considerations on designs in the context of integrated programs.
4. Ability to monitor adverse events within a program.

RESULTS (1)

Based on the PIPs and the program objectives, ultimate, intermediate, and immediate outcome indicators, and process indicators were defined and prioritized.

Ultimate outcomes:
- Infant growth (Height-for-Age Z score)
- Infant micronutrient status (Hemoglobin)
- Infant morbidity from infectious disease (Point prevalence of diarrhea)

Intermediate and immediate outcomes:
- Improved utilization/consumption (IYCF indicators) on use of adequate complementary foods, MNPts
- Improved provision (improved community-based management of MAM/SAM, improved IYCF counseling)

In Ethiopia, a quasi-experimental matched-control cluster design and in Burkina Faso a cluster randomized control design was selected with repeated cross-sectional surveys (Figures 2 and 3).

RESULTS (2)

Sample sizes were based on:
- Expected differences in primary outcome Height-for-age (HAZ).
- A population-based sampling scheme with correction for the design effect and cluster correction depending on the number of eligible children in each cluster
- Different age-cohorts for the different outcomes were selected based on:
  - Age at which greatest potential benefit can be detected
  - Age at which the exposure to programme interventions is the largest

The evaluations will also include an intensive morbidity surveillance in subsample of children followed longitudinally from 6 to 12 months of age to assess morbidity every 2 weeks, to provide information on risk-benefits of the intervention, following recent discussions around the safety of iron-containing supplements in young children without iron deficiency.

CONCLUSIONS

The complexity of measuring impact on child nutrition in an integrated programmatic context is often underestimated, leading to evaluations with inconclusive results or impacts that are difficult to attribute to program. Careful design could help avoid some of these pitfalls.

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