

Emergency Infant Feeding Surveys

Assessing infant feeding as a component of emergency nutrition surveys: Feasibility studies from Algeria, Bangladesh and Ethiopia



Emergency
Nutrition
Network

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Aim

*Investigate feasibility & utility of including
standard indicators of
infant feeding practice
in routine nutrition surveys.*

Objectives

- 1) *Describe the sample size assumptions and calculations required*
- 2) *Assess the precision achieved when measuring the indicators in 4 emergency nutrition surveys*

Background

Why good quality data is important:

- **Correct response to vulnerable situation**
 - Start programme when indicated (“threshold”)
 - No programme when there is no need for one (efficient use of resources)
- **Assessing programme impact**
 - Correct baselines
 - True impact vs artefact (poor validity; poor precision)
- **Assessing trends**
 - True differences vs artefact

Methods

Study design

- ~ Descriptive

- ~ Summary of key methodological features & results of:
4 recent emergency nutrition surveys.

- ~ Selected purposively

 - data on infant feeding (0 to 5.9m & 6 to 24 months)

 - A.Seal, CIHD/ICH ~ lead investigator on all surveys

Methods

Settings

- Refugee populations in
 - Algeria
 - Bangladesh
- Resident populations in
 - Ethiopia (highland)
 - Ethiopia (lowland)

Sampling (within each survey)

- ‘Traditional’ 2 stage, 30x30 cluster design.

Methods

Participants

- Children aged 6 to 59.9 months
= main population of interest in most nutrition surveys, including the four described.

- Young infants aged 0 to 5.9 months
= *additional to* the above

Methods

Measurements

- 3-4 day team training (= standard)
- Included anthropometry, morbidity questions and 24 hour recall food frequency questionnaire
 - ESTABLISHED / CONSISTENT / VALIDATED
(Mary Lung'aho et al – previous presentation)
 - **current** feeding practices (all infants, ages 0 to 23.9m)
 - Focus groups / key informants for inclusion of specific local food items
 - Questionnaires were translated into local languages and piloted prior to the start of each survey.

Methods

Sample size (1)

- Emergency nutrition cluster surveys, where prevalence data limited, → 900 children aged 6-59 m
- To calculate the number of infants required:
 - 1) likely prevalence,
 - 2) required precision,
 - 3) anticipated 'design effect' (=loss of power in a cluster sampling method vs simple random sample)
 - ~ routine to assume 2 for standard anthro indicators (cases localized, not random) → x2 sample size
 - ~ we assumed infant feeding practices not localised → design effect=1 → no sample size increase

Methods

Sample size (2)

- To determine prevalence of EBF (0-5.9m):
 - 30% prevalence *assumed*
 - ➔ based on *global* statistics, [ref: UNICEF Statistics <http://www.childinfo.org/eddb/brfeed/index.htm>]
 - Design effect = 1
 - desired precision of $\pm 15\%$,
 - ➔ adequate for a baseline needs assessment

***** sample size = 36 infants *****

Methods

Sample size (3)

- To determine prevalence of continued BF at 12 and 24 months:
 - 60 % prevalence assumed,
→ also based on available global estimates, and a
 - precision of ± 20 %.

sample size:

*** 24 children aged 12 to 15.9 months ***

*** 24 children age 20 to 22.9 months ***

Population pyramid → ? recruit from the 900 'core' survey 11

Methods

Statistical methods ~ for individual surveys

- Data entry, validation, cleaning → EpiInfo v.6.04d
- Separate files for:
 - 0-5.9 month
 - &
 - 6-59.9 months
- Analysis → EpiInfo v.6.04d and SPSSv11

Methods

Statistical methods ~ key to this paper....

- For each indicator...

 - in each survey...

 - we retrospectively calculated:

 - Design effect
 - Standard error
 - Actual precision achieved

Results

Survey site	Algeria Saharawi Refugee Camps, Tindouf	Bangladesh Myanmar Refugees Camps, Cox's Bazar	Ethiopia Aroressa Woreda, Sidama Zone *	<i>Ethiopia Aroressa Woreda, Sidama Zone **</i>
Date of survey	12 th - 22 nd Sept. 2002	18 th - 24 th Aug. 2003	12 th - 25 th Mar. 2004	12 th - 25 th Mar. 2004
Total Population	154,670	19,804	84,655	40,675
Survey sample***				
Infants (0-5 m)	92	98	52	46
Children (6-59 m)	907	923	918	921
Sample ratio				
0-5 m:6-59 m	1:10	1:9	1:18	1:20
Survey measures				
Infants (0-5 m)	FFQ, WH, HA	FFQ	FFQ	FFQ
Children (6-23 m)	FFQ, WH, HA	FFQ, WH, HA	FFQ, WH, HA	FFQ, WH, HA
Children (24-59 m)	WH, HA	WH, HA	WH, HA	WH, HA

Results (t.b.c...)

Indicator*	Age group analysed	Algeria	Bangladesh	Ethiopia (highland areas)	Ethiopia (lowland areas)
Ever breastfed	0-23 m	n=371 93.3% (95.3, 99.4) <i>DE=tbc</i> <i>SE=tbc</i> <i>RP=tbc</i>	n=360 97.8%	n=261 95.0% (92.1-97.9)	n=238 99.6 (98.8-100.0)
Timely initiation of breastfeeding	0-23 m	n=369 12.7% (8.8-16.7)	n=357 42.3%	n=260 93.1% (88.5-97.6)	n=235 91.1% (85.1-97.1)
Exclusive breastfeeding	<6 m	n=87 2.3% (0.0-6.8)	n=92 53.3%	n=52 71.5% (58.2-84.1)	n=46 47.8% (32.6-63.0)
Continued BF at 12 m	12-15 m	n=82 84.1% (75.3-93.0)	n=67 95.5%	n=64 95.3% (90.7-99.9)	n=57 96.5% (92.0-100.0)

etc... for 10 indicators¹⁵

Discussion

Key result and interpretation

- Successful inclusion of infant feeding indicators into a standard nutrition survey is feasible and achievable.

➔ *Diverse physical and social settings:*

refugee camps ~~~> resident populations

Sahara desert ~~~> Ethiopian highlands.

Discussion

Mortality & morbidity consequences

- n=4 surveys too small to reliably interpret the mortality and morbidity implications

BUT notable that

- All 4 sites far short of ideal infant feeding practice
e.g.
 - EBF as low as 2% in Algeria
 - Best EBF, in the Ethiopian highlands only 71.5%

➔ *potential for harm (6-59.9m MAM/SAM high)*

➔ *need for interventions*

Discussion

Including IF indicators important because:

- Better planning
- Identify & address potential negative effects of emergency interventions
 - e.g. effects of code violations
- Increased awareness of infant feeding issues in communities surveyed
- (In principle), problems can be addressed proximally, *before* MAM/SAM evolves

Discussion

Other issues

(work in progress)

- Anthropometry in 0 – 5.9m
 - Difficult in this age! (e.g scales)
 - Only 1 of 4 surveys measured young infant anthropometry
 - Interpretation
 - NCHS vs WHO standards

Binns C, Lee M. Will the new WHO growth references do more harm than good? *Lancet* 2006; **368**: 1868–69 (figure)

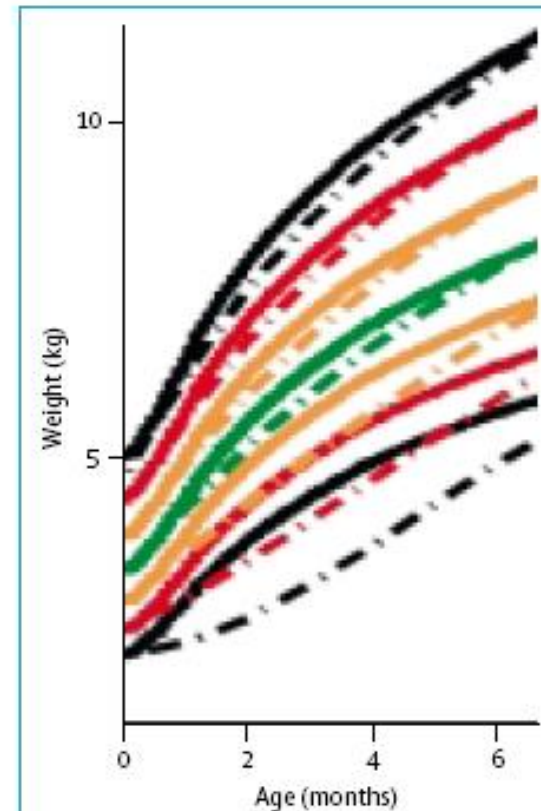


Figure: Comparison of weight-for-age Z scores for boys

Z scores -3 (bottom pair of lines) to +3 (top pair of lines) shown. Solid lines=new reference. Dashed lines=old reference. Reproduced from reference 2, with permission.

Discussion

Other issues *(future work)*

- Survey methodology

LQAS vs 30x30

Conclusions

- Our preliminary results suggest that inclusion of already available, validated questions about infant feeding practice is feasible and achievable
- These may be integrated within current emergency nutrition survey designs
- We suggest that there are strong arguments for routine inclusion
- However, we acknowledge that all data collection and analysis has a cost
- Any data collection should only take place in an emergency context when it will be used to inform decision making.



Thank You