Reviewer’s report

Title: "Stool frequency recording in Severe Acute Malnutrition (‘StoolSAM’): An agreement study comparing maternal recall versus direct observation using diapers."

Version: 0 Date: 31 Oct 2016

Reviewer: Charles Larson

Reviewer's report:

General Comments: A clearly written paper. Several references are secondary, which should be avoided. The statistical results, as presented, are quite confusing (please see specific comments below). Please note page numbering refers to the # from the cover page onward.

Abstract:

Background: This is misleading. The paper addresses the estimation of stool frequency in admitted children with SAM, not all children with acute diarrhea.

Results: what is meant by "limits of agreement"?

Conclusion: limited to hospitalized children with SAM + co-morbidity.

Introduction

p 6 line 43: these are secondary references

54: this statement requires a reference

57: this statement requires a reference

Please make it explicit that the study is addressing the detection of diarrhea in admitted SAM children. A reference documenting that mothers' recall is the standard in nutritional rehabilitation units will strengthen the case for this study.

Methods

Clearly and concisely define the "gold standard" i.e. q2hr diaper observations from 8am to 6 pm, thereafter the # of diaper changes made by the caregiver. What if a diaper was changed because it was wet, but no diarrhea - was this included in the count?
p 11 line 145: Sample size estimation: This requires clarification and reference the equation used. Was this based upon a minimal detectable difference in #reported stools? at what precision? If citing "alpha", then match with "beta. Otherwise level of confidence and power.

Analysis

If the intend is to more accurately diagnose diarrhea (case finding) then the appropriate criterion validity will be the positive and negative predictive values, not sensitivity and specificity.

Results

The authors need to provide a CONSORT figure. How did they go from 307 SAM admissions to 113 enrolled? On p8, line 88 the number provided is 120. Please clarify

p11 line 168 who are "of these"?

169: indicate this is group 2
170: confusing - is this the median # days with co-morbidity symptoms?
171: median of 3 days of diarrhea in who? All?

p12 line 183: move to methods
189: no additional file seen
194: report P&NPVs

p13 lines 212-16: it is unclear what is being reported. Stool frequency or differences?
p 14 line 242: direct observation of stool frequency did not occur. It was indirect.

Discussion

Opening sentence is redundant.
p15 line 256: improved care or patient outcome was not studied.
as explained under methods, diaper observations occurred 10 hrs per day, not 14

p16 lines 277-283: omit, not relevant to this study. predictive models were not studied.

Figure 2 not necessary.

p17 line 286: yet to be verified

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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