Factors associated with child wasting in South Asia: An in-depth analysis of household survey data in six countries

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RATIONALE

South Asia continues to carry the greatest burden of wasted children worldwide. Understanding the factors associated with wasting in this region is important as policymakers renew efforts to tackle this persistent development problem.

OBJECTIVES

1) Determine factors are associated with wasting by country

2) Evaluate the association of (a) LBW and (b) IYCF associated with each wasting, severe wasting, co-occurrence of wasting *and* stunting

METHODS

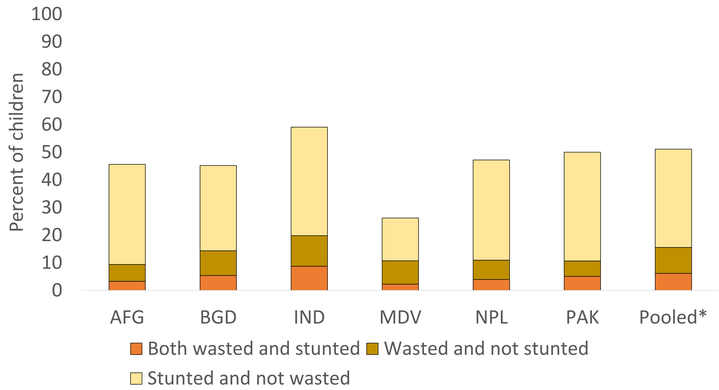
National surveys from Afghanistan (2013), Bangladesh (2014), India (2005-06), Maldives (2009), Nepal (2011), Pakistan (2012-13) were pooled for this analysis. Children < 5 y with plausible WHZ (-5 to 5) and non-pregnant mothers (Total N=69,067) were included in the sample.

Objective 1: Mixed logistic regression analysis was used to evaluate factors associated with wasting. Factors were explored by country. All factors being examined were included in a mixed logistic regression model and backwards stepwise methods identified a parsimonious model by country (P<0.05).

Objective 2: Associations between each LBW and IYCF with each wasting, severe wasting and the cooccurrence of wasting and stunting were explicitly tested in the pooled sample using mixed logistic regression. Sample size for analysis examining LBW was limited based on reported birth weight (n=20,847) and samples for analysis by IYCF was specific to appropriate ages of the specific feeding practice. Differences across country were tested using interaction terms in each model between predictor and country.

RESULTS

The distribution of wasting and stunting



Factors associated with wasting

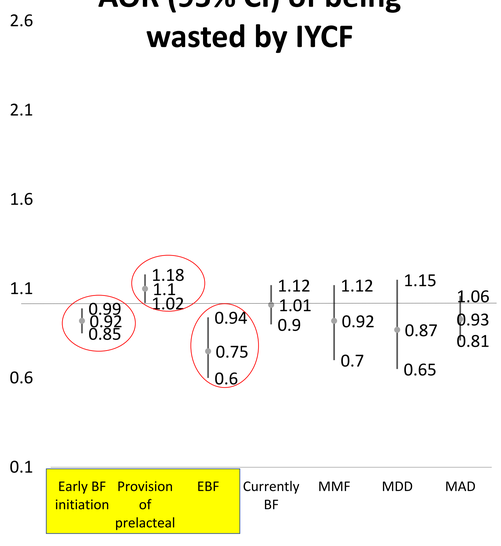
Level	Factors associated with likelihood of wasting in 3 or more countries	Countries in which the association was significant
Individual	Younger child age (typically 0-5m = >risk)	AFG, BGD, IND, MDV, NPL, PAK
Individual	Male	AFG, BGD, IND, PAK
Individual	Being stunted (HAZ < -2)	AFG, IND; stunted: BGD
Maternal	Thinness (BMI < 18.5 kg/m2)	AFG, BGD, IND, MDV, NPL
Environment	Variation across regions within country	AFG, BGD, IND, PAK

AFG, Afghanistan; BGD, Bangladesh; IND, India; MDV, Maldives; NPL, Nepal; PAK, Pakistan, HAZ, height-for-age z score; BMI, body mass index

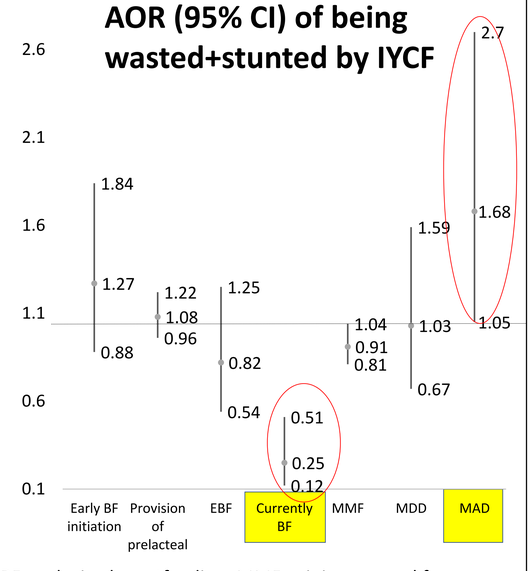
AOR (95% CI) of being wasted, stunted and wasted+stunted given a child is LBW vs. not

The odds of being wasted and stunted was higher among children with LBW compared to those not among children of all age groups when the sample was stratified by age, and among children of all wealth quintiles except the poorest, when stratified by wealth

AOR (95% CI) of being wasted by IYCF



AOR (95% CI) of being wasted+stunted by IYCF



IYCF, infant and young child feeding; BF, breastfeeding; EBF, exclusive breastfeeding; MMF, minimum meal frequency; MDD, minimum diet diversity; MAD, minimum acceptable diet
Samples for analysis by IYCF was specific to appropriate ages of the specific feeding practice

CONCLUSIONS

1) Low birth weight, younger child's age, poor breastfeeding and complementary feeding practices, and low maternal body mass index were the most significant/strongest predictors of child wasting. In some countries, being male, later birth order, maternal illiteracy, short maternal stature, and lack of access to improved water or sanitation were also associated with wasting. Household wealth and seasonality were not consistently associated with wasting. LBW and IYCF are important correlates of wasting and the comorbidity of wasting + stunting. Interventions to reduce LBW and optimize IYCF are crucial to reducing *both* wasting and stunting.

2) 1,000 days is the "window of opportunity" mainly focused on stunting. These findings show 1,000 days also critical determinant of wasting.

3) More formally linking efforts to manage wasting with preventing stunting (and vice versa) could achieve greater gains in reducing both.

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