

Background

- Evidence on the relative importance of various factors associated with febrile illness in children and their heterogeneity across countries can inform the prevention, identification, and management of communicable diseases in resource-limited countries
- As the burden of malaria continues to decrease across Africa, health care workers are faced with the challenge of the diagnosis of febrile illness in children, particularly in the face of few or no diagnostic tools

Objective

• To assess the relative significance of factors associated with childhood febrile illness in 27 countries of sub-Saharan Africa (SSA)

Methods

Data source

- Data was from IPUMS DHS public datasets with time period from 2010 to 2018
- The DHS surveys are supported by US Agency for International Development (USAID)

Study Design and Population

• A population-based cross-sectional study included 298, 327 children ages 0-5 years from 27 SSA countries

Assessment of Outcome Variable

• Febrile illness was defined as the presence of fever in 2 weeks preceding the survey

Statistical Analysis

- Prevalence of febrile illness was calculated as the number children who had febrile illness divided by the total number of of children surveyed multiplied by 100%
- Multivariable logistic regression models with sampling weight, cluster, and strata were applied to delineate factors association with febrile illness
- Stratified analyses were performed for each independent factor of illness by 27 SSA countries

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Factors Associated With Pediatric Febrile Illness in Sub-Saharan Africa

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Distribution of febrile illness by age (months)

Country-specific adjusted odds ratios for 18 factors associated with febrile illness in in 27 SSA countries

1.1	1.2	1.2	1.4	3.3	1.1	1	1	1.4	0.9	1.2	1	0.8	1	1.1	4.2	1.2	1	1.3
1.1	1.2		1	3.7	0.9	1.2	1.1	1.1	1	1.1	1.1	1.1	0.9	1	6	1.1	1.1	1.1
1.2		1.9	1.1	3.5	1	1.3	1	0.9	1.3	1.3	1	0.9	0.9	0.8	6	1	1.2	1
1.2	1.9	2		1.9	1.1	1	1	2.1	1.2	1	1.2	0.9	1	1.6	2.6	1.6		1
1.1	2	2		2.9	0.9	1.1	1.1	1.2	0.8	1	0.9	1	1.2	0.8	3.9	1.1	1.5	1.1
1.1	1	1.2	1.2	5.1	0.8	0.7	1	0.4	1	1.1	0.7	1	1.2	0.9	6	1.1	0.9	0.8
1.1	1.3	1.6	1	4.3	1	0.8	1	1	0.8	1.2	1.3	0.9	1.1	1.3	8	0.9	1.1	1.4
1	2.3	2.2	1.1	1.9	1	1.2	1	1.1	1	1	1	1	1.1	1.4	4.4	1	1.3	1.1
1.1	1.2	1.3	1.2	4.3	1		1	1.4	1.9	1	1.2	0.8	1.2	1	9.7	0.7	0.8	1.2
0.9	4.1	3.1	0.8	3.3	0.8	1.3	1.2	0.8	1	1.5	0.8	1	1.1	1	6.8	1.1	1	1.4
	1.2	1.3		2.5	1	0.6	1.1	1.3	1	1.1	1	1	1	1.2	7	0.7	1	1.2
1.2	1.6	1.9	1.2	2.5	1	1.3	1.1	0.8	0.9	1	1.2	1	1.2		5	1.1	0.9	1
0.9	1.6	1.8	0.9	1.6	0.8	0.5	1	2.2	1	0.9	0.6	0.9	0.9	1.3	13.4	1.4	1.2	1
1	1.4		1	2.5	1.1		1.1	0.5	1	1	0.6	0.8	1.2		5.3	1	0.9	1
1	1.4			2.2	0.9	1.1	1	1	1.1	1.1	0.9	0.9	1.1	1.2	2.7		0.9	1.4
1	1.2	1.2	1.4	4	1.1	1	0.9	0.7	1.4	1.4	1.1	0.8	0.8	0.9	4.7	1.4	1.1	0.9
1.1	1.7	1.5	1	3.5	0.8	1.2	1.1	0.7	0.9	1.1	1.1	0.7	1.1	1.7	7.8	1	1.3	1.1
1.1	1	1.1	1.1	3.1	0.8	1.4	1.1	0.9	0.7	0.8	1.5	1.3	0.9	0.8	7.5	0.7	1	1
1.2	1.3			3.8	1.1	1.1	0.9	1.5	1	1	0.9	1.1	0.9		9.4	1	0.9	1.1
1	2	1.9	1.4	3.3	1.1	1.2	1	1.8	0.9	1.1	1.1	0.9	0.9	1.6	6.2	1.2	0.9	1
1	2.1	1.9	1.1	3.9	1	16.8	0.9	0.6	1.1	0.8	0.9	1	1.2	1	8.3	1.1	1.2	1
1.1	1	1.4	0.9	3.5	1.1	0.8		1.3	1.3	1	1	0.8	1	1.4	3.9	1	0.9	1
0.9	1.1	1.3		1.2	1.1	0.6	1.2	6.2	1.4	0.8	0.9	1.2	0.6	0.8	23.2	1.4	0.7	1.1
1	2.1	1.5		2.4	1.3	3.4	1.2	0.8	1	0.9	1.2	0.9	0.8	0.8	6.4	0.9	1.4	1.1
1.2	1.8			2.6	1.4	1.1	0.9	1.8	1.1	1	1.4	0.8	1	4.1	3.1		0.7	0.6
1	1.7	1.6	1.2	2.9	0.9	0.6	1.2	0.7	1	1.2	1	0.9	1	2	7.1	1.3	0.9	1.1
1	0.8	1	0.9	1.3	1.3	1.4	0.8	0.8	1.6	1.4	1	1	0.8	0.8	3.6	1.1	0.9	1.1
NĊ visits	25 to 59 mo	7 – 22 mo	Breastfeeding	g Diarrhea	Inadequate family planning	Indoor pollution	Male	Mother not educated	Mother not Married	Mother not working	Mother young	No Vitamin A Supplement	Not fully vaccinated	Poorest HH wealth	Respiratory infection	Rural residence	Unsafe stool disposal	Unsafe water

Variables

Results

Respiratory infection 7–24 mo vs. 7 25–59 mo vs. 7 m Poorest HH wea Lack of education Delayed breastfeeding Not Marrie Not Working 54 Young Mother < 4 ANC visit Lack of family planning Unsafe v Not fully vaccinated Age (per 6 months) Unsafe stool disposa Indoor Pollution No Vitamin A Supplement

< 1.0 1.0-1.1 1.1-1.3 1.3-2.0 2.0-4.0 > 4.0

- associated with childhood fevers
- countries
- antimalarial drugs or antibiotics
- resource countries





Relative strength of independent factors associated with febrile illness (adjusted OR and 95% CI)

Discussion & Conclusion

In this pooled analysis of nearly 300,000 children from 27 SSA countries, respiratory infections, diarrhea, poor household socioeconomic conditions (household wealth and maternal education) were the leading factors

• The relative magnitude of other factors, such as early breastfeeding initiation and rural residence, showed considerable heterogeneity among

Major causes of fevers in SSA is likely to be attributed to respiratory infections and possibly viral infections, which may not be treated by

Point-of-care diagnostics are needed to identify the pathogenic causes of respiratory infections to guide the clinical management of fevers in limited-

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