THE EFFECTS OF BREASTFEEDING, WATER AND SANITATION ON UNDER-FIVE MORTALITY IN UGANDA

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Background

In theory, breastfeeding reduces morbidity and mortality risks among children (Edmond et al, 2007, Palloni and Tienda, 1986). Although it is ignored, there is growing concern that failure to breastfeed in areas where water and sanitation conditions are poor increases the mortality risk (Esrey, 1991,Clemens et al, 1993). In Uganda, only 62% of children are exclusively breastfed (Wobudeya et al, 2011) yet only 48% and 32% of the rural and urban population respectively access clean water (UNICEF, 2011).

Objectives

1) Study the effects of breastfeeding, water and sanitation on under-five mortality. 2) Explore interaction effects of breastfeeding, water and sanitation on under-five mortality.

Methods and Materials

The study uses the Uganda Demographic and Health Survey data (2011) and applies logistic model for the analysis.

Findings

On Tables 1, mortality risk increases 17 times among children not breastfed relative to children breastfed. There is a significant association between breastfeeding and under-five mortality ($p<0.05$). However, water source, whether toilet facilities were either shared or not and the type of sanitation facilities have no significant association with under-five mortality. Water from the open source was the safest while tap water carried the highest risk relative to borehole water source.

After interacting with breastfeeding, the mortality risk increases by 29% in households that use tap water and 10% among children in households that use open water source. Further, the interaction result shows an association between water sources and under-five mortality move to near significance ($p=0.06$). Although odd, after the interactions between breastfeeding and sanitation facilities there are further drops in mortality risk among children in households that use pit latrines and those that do not have any facilities at all. Besides, the p-value of the category of households that have no sanitation facilities attain a high level of significance.

The mortality risks increase with education and income levels after interacting with breastfeeding.

Table 1: The effects of breastfeeding, water and sanitation on under-five mortality

Variables	Odds Ratio	Z	P-Values
Breastfeeding			
Yes**	1.000		
No	16.931	11.74	0.00
Water source			
Borehole	1.000		
Tap	1.010	0.04	0.969
Open source	0.982	-0.11	0.910
Sharing Toilet			
No**	1.000		
Yes	0.838	-1.15	0.248
Waste Disposal			
Latrine	1.000		
Open	1.007	0.05	0.962
Sanitation Facilities			
VIP/Flush**	1.000		
Pit Latrine	0.848	-0.87	0.386
No Facility	0.675	-1.86	0.063
Child Sex			
Male **	1.000		
Male Female	1.257	1.57	0.117
Education Level			
None **	1.000		
Primary	0.497	-2.57	0.010
Secondary	0.503	-2.09	0.037
Higher	1.021	0.04	0.969
Income Level			
Poorest**	1.000		
Poorer	0.951	-0.22	0.827
Middle	0.932	-0.30	0.767
Richer	1.303	1.01	0.315
Richest	1.802	1.80	0.072
Place of Residence			
Rural**	1.000		
Urban	1.617	1.82	0.069
Children in household			
<3**	1.000		
>=3	3.055	5.13	0.000

Discussions

The results support the theory that lack of breastfeeding in unclean environment increases the risk of mortality. In Philippines, the risk of mortality among infants who were weaned was highest when water was highly contaminated (VanDerslice, Popkin and Briscoe, 1994).

Table 2: The Interaction Effects

Variables	Odds Ratio	z	P-Values
Water source*Breastfeeding			
Borehole*Breastfeeding	1.000		
Tap*Breastfeeding	1.291	1.85	0.064
Open Source*Breastfeeding	1.100	0.81	0.420
Waste disposal*Breastfeeding			
Open Source*Breastfeeding	1.000		
Pit Latrine*Breastfeeding	1.250	1.38	0.166
Sanitation Facilities*Breastfeeding			
VIP/Flush*Breastfeeding	1.000		
Pit Latrine*Breastfeeding	0.758	-1.35	0.176
No Facility*Breastfeeding	0.533	-2.75	0.006
Education Level *Breastfeeding			
None*Breastfeeding	1.000		
Primary*Breastfeeding	1.008	0.06	0.963
Secondary*Breastfeeding	1.345	1.76	0.078
Higher*Breastfeeding	1.972	2.12	0.034
Income Level *Breastfeeding			
Poorest*Breastfeeding	1.000		
Poorer*Breastfeeding	1.016	0.11	0.911
Middle*Breastfeeding	1.250	1.48	0.138
Rich*Breastfeeding	1.288	1.59	0.111
Richest*Breastfeeding	1.738	3.65	0.000
Water source*Children in household			
Borehole*Children in household	1.000		
Tap*Children in household	0.390	-2.24	0.025
Open water*Children in household	0.987	-0.03	0.972

Recommendation

Exclusive and breastfeeding for at least two years should be adhered to while at the same time maintaining clean environment and following proper hygiene practices.

References

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