How Parental Education Levels Affect Health Outcomes in Children <5 years old in Sierra Leone

ALMA COLLEGE

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Introduction

- In 2018 there were an estimated **228 million cases** of malaria worldwide
- 93% of all malaria cases (213 million) in 2018 were in Africa
- Children with malaria are twice as likely to have anemia when compared to children who did not contract malaria
- In Sierra Leone, **~50% of children aged 0-4 were reported to have contracted malaria**
- Parental education is correlated with their child's nutritional and immunization statuses
- Severe wasting and maternal education are independent predictors of malaria

Hypothesis: Children whose parents have higher education levels will be less likely to contract malaria and have higher Z-scores than children whose parents are less educated

Methods

- Study was conducted at the Magbenteh Community Hospital's outpatient Children's Clinic
- The Under Fives Clinic treats sick patients and provides vaccinations free of charge
- Gave surveys and consent forms to parents who came into the Under Fives Clinic in Magbenteh Hospital in Sierra Leone
- Recorded height, weight, and diagnoses of children
- Calculated nutritional Z-scores (WHO Child Growth Standards)

Results

Table 1. Mann-Whitney *U* Correlational Statistics assessing the relationship between Parental Education and diagnoses of illnesses and use of malaria prevention measures.

	U	*p*
no diagnosis	1629	.002
negative malaria	1474	.002
diagnoses of illnesses other than malaria	1090	.188
likelihood of using ITN	684	.785
likelihood of using IRS	2853	.904

Shaded rows indicate a statistically significant correlation

- Children who were not diagnosed with any illness were more likely to have parents with a higher education level
- Children who were not diagnosed with malaria were more likely to have parents with a higher educational status
- **The correlation between health and parental education is not due to the use of malaria prevention measures**
- Weight-to-age and weight-to-height Z-scores are positively correlated with their parents' education

Table 2. Spearman rank-order correlation between education level of parents and nutrition-related Z-scores of children

	ρ	*p*	correlation
Weight-to-Age (malnutrition)	.172	.034	mild positive correlation
Weight-to-Height (wasting)	.235	.004	mild-moderate positive correlation
Height-to-Age (stunting)	.038	.648	no correlation

Shaded rows indicate a statistically significant correlation

Discussion

- Previous literature shows a relationship between parental education and children's health outcomes predicted that the underlying cause of the correlation was access to information and/or socioeconomic conditions
- The results of this study may be explained by **increased use of preventative healthcare** by parents with higher education levels.
- Most participants of the study who were not diagnosed with any disease or illness had come to the clinic to receive vaccinations

Conclusions

- Children whose parents have higher education levels are less likely have a malaria diagnosis
- Parents' education level was positively correlated with child's nutritional status
- As with previous literature, it is predicted that **the underlying cause of the correlation between child's health and parental education was access to information and/or socioeconomic conditions**

Acknowledgements

- **Funding for this research was obtained through the Alma College Posey Global Grant.**
- **Thank you to the Magbenteh Community Hospital for their invaluable assistance and their hospitality**
- **Faculty Research Advisor: Dr. Brianna Harfmann**