

Childhood Nutrition in Rural Uganda—A Global Health Commentary

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Children played happily while parents and adolescents worked in shops and prepared food. Physical possessions were neither coveted, nor necessary. People appeared well cared for, happy, and healthy. These were among our initial impressions of rural Uganda upon arrival with the University of British Columbia Global Health Initiative. Upon closer inspection, the pervasive nature of various medical conditions became apparent—kwashiorkor, umbilical hernias, and tinea capitis were all prevalent among the children in the village. Despite these conditions, they still appeared to be typical, well-adjusted, happy kids, and it was not until entering the Paediatric Ward at Nakaseke Hospital that the astronomical impact of early childhood malnutrition became palpable. Among the crowded, rust-ridden hospital beds, numerous children with profound anemia sat with the foam pieces and bed sheets strewn on the floor. Not only were their conjunctiva ghostly white, but the extent of their iron deficiency could be seen in the pallor of their palms and soles, and in the diminished quantity of their fine, wispy hair. To make their daughters’ hair beautiful, mothers had studded it with coloured beads; “Spend money on food instead of those beads,” the doctor said, “and their hair will be beautiful.”

Stunting among the children seemed to be the norm rather than the exception, with the children appearing to be much younger than their stated age. Nevertheless, the cause of the children’s presence in hospital was always infectious—malaria, viruses, TB, and so on. These were their diagnoses, and their management resembled the principles of Western medicine—stabilize, prescribe medication, and repeat as needed. That malnutrition predisposes children to these illnesses was not well addressed, likely due to the lack of time and resources.

One day, the ultimate consequence of childhood malnutrition presented itself in the form of a child who we will forever remember. As the doctors arrived at the bedside, a mother laid a bundle of blankets on the bed that we could only assume contained a very young infant. As the blankets unravelled, a baby no bigger than a two month old was revealed. The child was screaming but could make no sound, was crying but could produce no tears, and had a body whose skin was peeling, flaking, disintegrating. Despite appearances, this child was almost a year old. She had almost no muscle tone, and could not support her own neck, let alone sit or stand. She was the second-born of triplets; the oldest

had already passed away. The youngest sat on the floor next to her mother; her signs of malnutrition were evident and progressive, but she was not the one receiving treatment today. To complicate the situation, the mother was pregnant again, and, according to a belief practiced by some Ugandan women, could no longer breastfeed her current children. With an average of seven children born to every woman and a subsequent high gravida frequency, this cultural tradition of not breastfeeding while pregnant gives rise to a significant public health concern for the young children in the region.

Initially, it seemed incredulous that this presentation could be solely a result of malnutrition. Although this child was by far an extreme example of the nutritional challenges facing the children in the Nakaseke area, the experience had a profound impact on us, ensuring that we would never forget the dramatic and long-term impact that early childhood nutrition can have. Many questions remained in our minds as to the underlying cause of these nutritional deficiencies and the steps necessary to begin creating change.

Through further investigation we learned that neonatal and early childhood malnutrition is a well-documented issue in Uganda. According to the 2006 Uganda Demographic and Health Surveys (UDHS), 38% of children surveyed were stunted, 6% were wasted, and the rate of underweight children was at 16% among the under-five-year-olds included in the survey.¹ There appear to be several issues that contribute to their malnutrition: firstly, a lack of resources for young mothers and multi-child families; secondly, high HIV rates which present a barrier to breastfeeding due to the risk of HIV transmission; and thirdly, a lack of education surrounding issues of breastfeeding practices.

We were surprised by a local expert opinion in Nakaseke that a lack of education regarding nutrition and proper feeding schedules is the strongest contributor to the region’s childhood malnutrition. Studies have not extensively explored this claim, yet data from the UDHS suggests that 40% of mothers with infants six months or younger do not exclusively breastfeed, 20% of infants six to nine months do not get timely complementary feeding, and 72% of children six to twenty-three months receive inadequate complementary feeds.¹ In addition, 58% of mothers do not initiate breastfeeding within the first hour of delivery; and 54% of babies are given pre-lacteal feeds (a carbohydrate and electrolyte rich solution given before the initiation of breast feeding), which may lead to increased newborn infection, especially given the water treatment practices in the region.¹


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This data suggests that there may be a lack of education among Ugandan mothers surrounding these practices, and demonstrates a need for further inquiry.

The Nutrition and Early Childhood Development Project ran from 1998-2005 in about half of the country's districts and was successful in increasing awareness and promoting positive behavioural changes in complementary breastfeeding at six months, among other targets.³ This was a national strategy involving all levels of government and the community; however, the local health offices believe the most effective way to create change in feeding practices and nutrition among mothers within a specific district is with peer mothers, community health workers, and midwives who can share their first-hand knowledge and evidence-based recommendations with mothers.²

The original goals of our UBC GHI project, which initiated our presence in Nakaseke Uganda, were in the field of health education, with a focus on sexual education, first aide, and life skills. We aimed to train the nursing aide students in Nakaseke District, Uganda, with the goal of having them translate this knowledge to secondary school students and the wider community.

With the nursing aide school closing down in preparation for a new nursing program beginning in the next few years, our team will have the opportunity to connect with and train community health workers in the district on maternal and children's health. It is our hope that through focus groups with local mothers, insight may be gained to address our questions regarding the area's childhood malnutrition, improve maternal education, and to find a sustainable path towards improved childhood health in the Nakaseke region. 

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Troubles with Diagnostic Tests: Observations from a Clinic in Tanzania

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In developed countries, diagnostic tests are a critical part of clinical medicine. This is because the available tests are generally highly accurate and can quickly confirm or exclude suspected diagnoses. As a result, physicians in developed countries have become increasingly reliant on such tests. In developing countries the same model is used, but the tests have limited accuracy. In these situations, physicians must rely more on clinical findings to obtain correct diagnoses. Drawing from a three-week shadowing experience at a clinic in Mwanza, Tanzania, I will provide a personal perspective on the challenges of diagnosing schistosomiasis and typhoid fever in a setting where resources are limited.

Schistosomiasis has a unique pathogenesis with multiple clinical stages. *Schistosoma haematobium* and *Schistosoma mansoni* are the blood flukes that cause urinary and intestinal schistosomiasis, respectively. In the population living on the shore of Lake Victoria, a region that includes Mwanza, the prevalence of *S. mansoni* ranges from 40-100%, while the prevalence of *S. haematobium* is the same if not greater.¹ Both species are found in contaminated water and infect humans by penetrating the surface

of exposed skin. In the body, they travel hematogenously to veins of the bladder and intestine. Here, they imbed in the vasculature, reproduce, and shed their eggs, which then are excreted via the bowel or bladder. Patients with schistosomiasis can present with either acute or chronic symptoms. Acute symptoms, commonly called Katayama fever, are due to egg deposition in body tissue and include fever, myalgia, diarrhea, and hematuria (*S. haematobium*). Chronic symptoms are due to an inflammatory response to *Schistosoma* eggs and high worm burden. They include splenomegaly, hepatic and genitourinary fibrosis, and in later stages, bladder cancer.^{2,3}

At the clinic, I saw many patients with symptoms resembling Katayama fever. These patients would have urine and stool samples taken for analysis because of the high clinical suspicion of microbial infection, and in particular schistosomiasis. However, it soon became evident that *Schistosoma* ova or parasites were only detected on rare occasions. In fact, when the clinic's laboratory records of 1000 stool and urine samples were examined from an unscreened population, only three documented cases of *Schistosoma* were found. Even for an unscreened population, the infection rate was surely higher in an endemic area.

The gold standard for schistosomiasis diagnosis remains

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