

Malnutrition and Elevated Mortality Among Refugees from South Sudan Gambella, Ethiopia, June - July 2014



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As a result of armed conflict in South Sudan which began in mid-December 2013, an estimated 1.1 million people were internally displaced, and over 430,000 refugees fled South Sudan to Ethiopia, Uganda, Sudan, and Kenya. Refugees from South Sudan arriving in Ethiopia are sheltered in three refugee camps located in Gambella region: Leitchuor, Kule, and Tierkidi. The camps were established during January – May 2014, and have an estimated refugee population of 47,000, 51,000 and 50,000 respectively. **Reports from health clinics and humanitarian agencies providing assistance to refugees suggested poor nutritional status of arriving refugees and elevated mortality rates.**

To assess the nutritional status of refugee children aged 6-59 months and mortality rates, the Administration for Refugee and Returnee Affairs (ARRA, Ethiopian government aid agency), United Nations High Commissioner for Refugees (UNHCR), World Food Programme (WFP), and United Nations Children's Fund, in collaboration with CDC, conducted cross-sectional population-representative surveys in Kule, Tierkidi, and Leitchuor camps during June – July 2014. Anthropometric measurements in children were taken using standard procedures (1), and nutritional status was classified based on 2006 WHO Growth standards (2). Hemoglobin was measured using HemoCue Hb 301. Anemia was diagnosed according to WHO thresholds (3). Retrospective mortality rates in Leitchuor and Kule were measured using a household census method.

Prevalence of global acute malnutrition among children aged 6-59 months ranged from 25.8% in Leitchuor to 30.2% in Kule, close to double the emergency threshold of 15%. Prevalence of severe acute malnutrition was also very high, ranging from 5.7% in Leitchuor to 10.0% in Kule (Table). Crude (all ages) and under-5 mortality rates substantially exceeded emergency thresholds of 1 and 2 per 10,000/day, respectively (4), in both Leitchuor and Kule (Table). Anaemia prevalence among children aged 6-59 months in all camps exceeded 40%, indicating a problem of high public health significance according to WHO classification (Table) (3).

Survey results indicate a serious public health emergency among refugees from South Sudan residing in the camps in Ethiopia. In response to the large influx of refugees, ARRA, UNHCR and other humanitarian agencies established essential health services and nutrition treatment programs coupled with active screening for malnutrition. Blanket supplementary feeding programs targeting young children and pregnant and lactating women were established in all camps. Efforts directed at strengthening outreach activities to detect malnourished children, decentralizing health and nutrition services to improve access, and scaling up sensitization of refugee population about available blanket feeding programs will likely result in improved health and nutrition outcomes and decreased mortality. All registered refugees in the camps are receiving food aid assistance from WFP, and the planned decentralization of distributions as well as family targeted distributions, as opposed to group distributions, are likely to improve the overall food security of vulnerable families.

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TABLE: Mortality rates and prevalence of global acute malnutrition and anaemia in child refugees from South Sudan. Ethiopia, June 2014

| Camp Name | Leitchuor camp | | Kule camp | | Tierkidi camp | |
|--|----------------|-------------|------------|-------------|---------------|-------------|
| | Standard | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) | % (95% CI) |
| Global Acute Malnutrition, children aged 6-59 months* | | | | | | |
| Total (WHZ< -2 or bilateral pitting edema) | 25.8 | (21.5-30.6) | 30.3 | (25.8-35.2) | 28 | (23.9-32.5) |
| Moderate (WHZ< -3 to < -2) | 20.1 | (16.3-24.6) | 20.3 | (16.4-24.7) | 20.2 | (16.6-24.3) |
| Severe (WHZ< -3 or bilateral pitting edema) | 5.7 | (3.7-8.6) | 10 | (7.3-13.5) | 7.8 | (5.6-10.8) |
| Anaemia, children aged 6-59 months[†] | | | | | | |
| Any anemia (Hb <11.0 g/dl) | 42.7 | (37.8-47.7) | 51.9 | (46.8-57.0) | 46.2 | (41.5-51.1) |
| Mild (Hb 10 to <11.0 g/dl) | 22.4 | (18.4-27.0) | 28 | (23.6-32.8) | 26.6 | (22.6-31.1) |
| Moderate (Hb 7 to <10.0 g/dl) | 19.9 | (16.1-24.4) | 23.4 | (19.3-28.0) | 19.1 | (15.3-23.2) |
| Severe (Hb <7.0 g/dl) | 0.3 | (0.0-1.6) | 0.5 | (0.1-2.0) | 0.5 | (0.1-1.7) |
| Crude Mortality Rate ^{§,¶} | 1.47 | (0.94-2.29) | 1.52 | (1.00-2.29) | | |
| Under 5 mortality Rate ^{**} , ^{††} | 3.87 | (2.17-6.84) | 5.15 | (3.19-8.25) | | |

Abbreviations: CI = confidence interval, WHZ = weight-for height z-score, Hb = haemoglobin

* Sample sizes: Leitchuor, 353; Kule, 360; Tierkidi, 411.

† Sample sizes: Leitchuor 361, Kule, 368; Tierkidi, 413.

¶ Sample sizes: Leitchuor, 2,046; Kule, 2,131.

†† Sample sizes: Leitchuor, 451; Kule, 457.

§ Deaths per 10,000 persons per day.

** Deaths per 10,000 children aged <5 years per day.

Nutrition Survey Graphical Presentation

