

Anaemia prevalence and causes among Syrian refugee children in Lebanon

This is a summary of the following paper: Jeremias T, Abou-Rizk J, Burgard L et al. (2023) *Anemia among Syrian refugee children aged 6 to 23 months living in greater Beirut, Lebanon, including the voices of mothers' and local healthcare staff: A mixed-methods study*. *Nutrients*, 15, 700. <https://www.mdpi.com/2072-6643/15/3/700>

Iron deficiency remains the most common nutrient deficiency in the world – causing an estimated 30–50% of anaemia cases in children. An estimated 40% of children aged 6–59 months and 36% of pregnant women aged 15–49 years are anaemic worldwide.

Syrian refugees in Lebanon – a country with underlying food insecurity brought about by a protracted economic crisis – are a particularly vulnerable group. However, there is a paucity of data for this group. This cross-sectional study aims to first quantify the prevalence of anaemia among 215 Syrian refugee children aged 6–23 months and their mothers (haemoglobin (Hb) finger prick and anthropometry). The study then identifies dietary and socio-economic determinants of anaemia, before investigating the relevant attitudes and perceptions of Syrian mothers and Lebanese healthcare staff (multi-component questionnaire). The qualitative assessment focused on 43 Syrian mothers and four Lebanese healthcare staff.

Child anaemia prevalence was 42% (29% mild, 13% moderate), which is in line with other studies and reflects a severe public health problem according to the World Health Organization. Comparison with other studies and data sources implies a worsening trend of anaemia in Beirut. Twenty percent of mothers were anaemic (15% mild, 5% moderate). Children were 3.5 times more likely to be anaemic if the mother was also anaemic.

Socioeconomic variables were found to not be determinants of anaemia among children aged 6–23 months, but the authors point to a homogenous study population as an explanation for this surprising finding. Mothers were generally able to describe some symptoms of anaemia, but knowledge on quality dietary sources of iron was poor. Compliance with iron supplementation protocols was found to be hampered by poor availability of supplements, financial constraints, and side effects such as vomiting. We encourage readers to review the detailed qualitative findings

in the original paper, which are beyond the scope of this summary.

The sample size for the main study was appropriate based on the authors' sample size calculation. The use of biomarkers is a strength of this study and the Hb cutoffs for study participants are in line with World Health Organization guidance for mild, moderate, and severe anaemia. A major caveat is that we are unable to distinguish non-iron deficiency anaemia from iron-deficiency anaemia, as no specific iron measures were taken – this reduces study specificity.

The sample size for the qualitative study is small, so its results should be interpreted with caution. The qualitative aspect may be affected by selection bias from both the researchers, who used convenience sampling to find participants, and those who accepted invitation to interview, who are unlikely to be representative. The study was also conducted in a small, urban area in a country that hosts an estimated 1.5 million Syrian refugees who are dispersed across the nation – so this is unlikely to capture the experiences of the broader group. Like all dietary recall studies, reporting bias may have been introduced, although steps were taken to ameliorate this during the study. Reverse causality cannot be ruled out with this study design. Nonetheless, this study highlights the high burden of anaemia among children aged 6–23 months and its key determinants in this population.

Food vouchers for moderate acute malnutrition: Evidence from Northern Cameroon

This is a summary of the following paper: Teta I, Foudjo B, Nielsen J et al. (2023) *Outcomes of a food voucher program and factors associated with the recovery rate of children with moderate acute malnutrition in far north Cameroon*. *Journal of Health, Population and Nutrition*, 42, 37. <https://jhpn.biomedcentral.com/articles/10.1186/s41043-023-00379-1>

Moderate wasting remains prevalent around the world but receives less research attention than severe wasting. This quasi-experimental study investigated the effects of a food voucher programme on overall recovery rates in eligible children in a rural, agricultural area within northern Cameroon. This was a longitudinal cohort study that defined recovery as a mid-upper arm circumference (MUAC) >125mm. Moderate wasting was defined as between ≥115mm and ≤125mm (Box 1).

Overall, 28,292 children aged 6–59 months were flagged by community health workers, with 2,126 then confirmed as moderately wasted by health centres.¹ Of these children, 333 were included in the study, which was conducted between January and August 2020. Children were excluded if they were severely wasted, severely ill, or if they refused to participate.

The intervention involved a CFA 8,000 (USD 15) voucher that could be redeemed for a standardised basket of food defined using NutVal²

software. The food basket was designed to provide adequate nutrients in combination with the existing diet, plus a small surplus to accommodate intra-household food sharing.

The overall recovery rate of enrolled children was 78.3%, with a significant increase in MUAC over time ($p < .001$). Unfortunately, 10.5% ($n = 50$) deteriorated into severe wasting, 3.4% remained moderately wasted post-intervention, and 7.2% were lost to follow-up. Over half the children (56.1%) were recovered at the first of six visits.

The minimum sample size, based on the researchers' calculation ($n = 456$), was not reached for this study so there is an increased likelihood of both false negative and false positive results. Although these results are significant, they may be unreliable. Taking previous studies into account and given the high recovery rate, there nevertheless appears to be value in this intervention. However, determining whether this is the most efficacious or cost-effective intervention requires additional research.

The use of a quasi-experimental design – without a comparison group – is a limitation, although there was no standardised moderate wasting treatment in this setting to compare against, so this study design was necessary. There was also no follow-up beyond the study period, so we are unable to determine whether children relapsed at a later point. Given the number of children who opted out of the study, with only 15.6% of the eligible population included, it is likely that selection bias was present. The researchers do provide descriptive statistics for the study population, which is a strength, but we cannot infer whether the population is representative without reference data for the broader area.

Box 1 A note on cut-offs

MUAC cut-offs are defined and applied in a variety of ways based on the programme or implementing agency. As cut-offs are an artificial point on a spectrum of malnutrition, they are limited as they do not always correlate to morbidity and/or mortality, which are the truly important measures when considering recovery rates. However, they are necessary as they allow programme resources to be prioritised to those most at risk. In this study, the cut-off for moderate wasting is in line with current World Health Organization guidelines.

¹ Those with severe wasting were treated according to government protocols in a separate programme.
² <https://www.unscn.org/en/resource-center/archive/methods-tools-and-indicators?idnews=1463>