

## Impacts of WASH on acute malnutrition: from available scientific evidence to informed action

Research snapshot<sup>1</sup>

**M**any of the 4.5 billion people who do not have access to improved sanitation or the 2.1 billion people who do not have access to safe drinking water sources are the same populations with high levels of acute malnutrition (AM). The hypothesised causal pathways between poor Washing, sanitation and hygiene (WASH) and child malnutrition consist namely of diarrhoea, environmental enteric dysfunction and helminth infections (worms) and, indirectly, the ability of families to provide safe and clean living environments, the time it takes to do so and the time it takes to adequately care for children in such en-

vironments. The aim of this review was to identify and evaluate the strength of the available evidence related to WASH and AM through a search of literature published between 2000 and 2017.

After inclusion and exclusion criteria were applied, 24 articles were included in the final analysis. Very little research has been conducted on the effect of WASH interventions on the treatment of AM, although evidence is building on the additional benefits of providing water treatment supplies and counselling for improved water quality alongside treatment. While additional trials are needed, treatment programmes

may consider the feasibility and cost of adding a water quality component to the current standard of care, with a focus on the continuation of such behaviours after discharge to help reduce relapse.

Many low-quality studies have been conducted that indicate associations between WASH-related indicators and child AM but very few high-quality intervention trials have been conducted that demonstrate significant impact on preventing malnutrition. The WASH sector includes a wide variety of diverse interventions. Extensive context analysis may be necessary before designing a WASH intervention to best match the intervention with the specific needs of the target population. Environmental testing may be helpful to determine what harmful pathogens are particularly present in the context and which interventions are best suited to stop transmission. It may also be possible that environments are so contaminated that one or even the combination of a few interventions aimed at individual or household level does not reduce the amount of exposure to harmful pathogens to realise an impact on AM and that community-level interventions may show more promise.

The author concludes that the current state of the evidence regarding associations between WASH and AM outcomes is very weak. Although hypothesised causal pathways are supported by strong logic, they have yet to be consistently proven through rigorous studies. High-quality, rigorous intervention studies are needed to prove or disprove the links between WASH and child AM to guide decision-making.



A mother is washing the hands of her baby, in the health center of Kaya, in the North of Burkina Faso

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<sup>1</sup> Stobaugh, H. (2020). Impacts of WASH on acute malnutrition: from available scientific evidence to informed action. R4ACT.

## High burden of undernutrition among at-risk children in neonatal follow-up clinic in Rwanda

Research snapshot<sup>1</sup>

**A** Paediatric Development Clinic (PDC) in rural Rwanda provides a medical home model for the medical, nutritional and developmental care of high-risk children up to the age of five after their discharge from specialised neo-natal care services. To gain a better understanding of nutritional outcomes among children enrolled at the PDC and to better design targeted interventions to accelerate the reduction of undernutrition in Sub-Saharan Africa, this study explored the prevalence of stunting, underweight and wasting and assessed associated factors among high-risk children (defined as born preterm, low birth weight or other birth and neurodevelopmental injuries) who received nutritional support and clinical care follow-up at the PDC.

This cross-sectional study included all children aged 6 to 59 months who had been enrolled at

the PDC between 2014 and 2017. An assessment of the age and anthropometric measurements was taken at the child's last visit to the PDC during this period and the records of 641 children were included. The study found a high prevalence of stunting (58.8%), underweight (47.5%) and wasting (25.8%) among children who received nutrition, development and medical follow-up at the PDC between 2014 and 2017. While the odds of wasting were particularly high among younger children, being born small for gestational age was associated with increased odds of stunting (odds ratio (OR) 2.63; 95% confidence interval (CI) 1.58–4.36) and underweight (OR 2.33; 95% CI 1.46–3.71). The history of feeding difficulties was significantly associated with wasting (OR: 3.36; 95% CI: 2.20–5.13) and with underweight (OR: 2.68; 95% CI: 1.78–4.04). Importantly, late PDC intervention was associated with increased odds of stunting (OR: 1.06; 95% CI: 1.01–1.11),

underweight (OR: 1.09; 95% CI: 1.05–1.14) and wasting (OR: 1.07; 95% CI: 1.04–1.10).

Although children at the PDC received additional nutrition, developmental and medical support, the heavy burden of undernutrition in this population indicates that even more specialised services are needed for the highest risk children beyond that which is currently provided within the PDC. For instance, children with feeding difficulties require specialised interventions that may be beyond the scope of management by general nurses and social workers in the PDC, or infants aged six to eight months transitioning from exclusive breastfeeding to complementary feeding (the highest risk group) may require interventions such as caregiver education and counselling on exclusive breastfeeding under six months of age, maternal nutrition among lactating women and support for timely transition to and adequate complementary feeding.

<sup>1</sup> Mutsindashyaka, T., Nshimiyiro, A., Beck, K., Kirk, C.M., Wilson, K., Mutaganzwa, C., Bradford, J.D., Havugarurema, S., Bihindiri, V., Ngamije, P.K., Mubiligi, J.M. and Miller, A.C. (2020). High Burden of Undernutrition among At-Risk Children in Neonatal Follow-Up Clinic in Rwanda. *Annals of Global Health*, 86(1), 125. DOI: <http://doi.org/10.5334/aogh.2636>