

**PILOTING TOM BROWN, A LOCALLY PRODUCED SUPPLEMENTARY FOOD FOR THE MANAGEMENT OF MODERATE ACUTE MALNUTRITION IN GOMBE STATE, NIGERIA**

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**Abstract**

**Background and objectives:** Over 50,000 children in Nigeria's Gombe state have moderate acute malnutrition (MAM) and are at risk of deteriorating to severe acute malnutrition (SAM). An effective strategy to reduce mortality is through a targeted supplementary feeding programme delivered within community-based management of acute malnutrition (CMAM) interventions. We present findings from an outpatient therapeutic programme (OTP) which used Tom Brown for treating children with MAM. Tom Brown is a locally produced flour blend of sorghum, soybeans, and groundnuts, consumed as a sweetened porridge.

**Methods:** We conducted retrospective analysis of patient data from OTP sites in three local government areas between October 2022 and December 2023. Data were extracted for children aged 6-59 months diagnosed with MAM, defined as absence of oedema; weight-for-height z-score (WHZ)  $\geq -3$  and  $< -2$ ; and/or mid upper arm circumference (MUAC)  $\geq 11.5$  and  $< 12.5$  cm. Those enrolled for at least 14 days and receiving 1.5 kg per week of Tom Brown were included.

**Results:** Of the 1,207 cases of MAM treated, 1,089 (90.2%) recovered i.e. had two consecutive visits with WHZ  $> -2$  and MUAC  $> 12.5$  and no severe clinical complications; 91 (7.5%) defaulted; 21 (1.7%) did not improve; 4 ( $< 1\%$ ) were transferred out; and 2 ( $< 1\%$ ) died at the end of follow-up. During treatment, 197 (16.3%) deteriorated to SAM and were switched to ready-to-use therapeutic food. All deaths (n=2) deteriorated to SAM. For children who recovered without deterioration, average enrolment length was 36.3 ( $\pm 15.8$ ) days and average weight gain was 4.21 ( $\pm 3.03$ ) g/kg/day.

**Conclusions:** With acceptable recovery and low death rates, Tom Brown is a feasible alternative for treatment of MAM. Made with cheaper ingredients, it can potentially reach more children for the same cost, particularly when combined with frequent screening and early diagnosis in the community. Timely follow-up of defaulters may also improve adherence. Research is needed to understand Tom Brown's effectiveness compared to commercial products or combination with cash-based assistance.

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**Ethical statement**

**This study:** Was exempt from IRB/ERB review as it was a retrospective analysis of routinely collected clinical data from an established programme. Treatment protocols and site operations were approved by relevant local authorities.