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Evaluating the Impact of a Fortified Blended Food Supplement on Nutritional Status and Tuberculosis Treatment Outcomes in Homa Bay County, Kenya: A Mixed Methods Study

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Abstract

Malnutrition is a common comorbidity in tuberculosis (TB) patients in sub-Saharan Africa and is associated with poor treatment outcomes. Homa Bay County, Kenya, has a high TB burden, but evidence on the impact of nutritional supplementation during treatment is limited. This study evaluated the impact of a fortified blended food supplement (FBFS) on nutritional status and TB treatment outcomes among adults undergoing TB treatment in Homa Bay County. A concurrent mixed methods study was conducted. The quantitative component was a quasi-experimental study comparing a cohort receiving the FBFS alongside standard TB care with a retrospective control cohort receiving standard care only. Anthropometric measurements and treatment outcomes were analysed. The qualitative component involved in-depth interviews with a subset of patients and healthcare workers to explore experiences and perceptions of the supplementation. The intervention cohort demonstrated a higher rate of treatment success (89%) compared to the control cohort (76%). Qualitative analysis revealed that patients perceived the supplement as providing essential energy for managing treatment side effects and maintaining daily activities. Provision of a fortified blended food supplement was associated with improved TB treatment success and was perceived as beneficial by patients and providers. Integrating nutritional support into TB care programmes should be considered for high-burden, resource-limited settings. Further operational research is needed to determine optimal delivery mechanisms and long-term sustainability. tuberculosis, nutrition, food fortification, treatment outcomes, Kenya, mixed methods This study provides context-specific evidence on the role of food supplementation in TB care in western Kenya, combining clinical outcome data with patient and provider perspectives to inform public health policy.

Keywords: *Tuberculosis, Nutritional Status, Sub-Saharan Africa, Fortified Blended Food, Mixed Methods, Treatment Outcomes, Kenya*

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