

**DETERMINANTS OF MALNUTRITION AMONG CHILDREN
UNDER FIVE YEARS IN MBEERE NORTH IN EMBU COUNTY**

ANNAH MBITHE MUENDI

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ABSTRACT

Malnutrition has remained a global public health issue in many developing countries with poor understanding of the sustaining factors of childhood malnutrition. The aim of this study was to evaluate the nutritional status of children under five years, assess the caregiver's knowledge on child feeding and child care practices and determine the factors associated with child malnutrition in Mbeere North Sub-County, Embu County. This study adopted a cross-sectional study design. The sample size was 388 children selected from 330 households from December 2023 to January 2024. Two structured questionnaires were used to collect data. Anthropometric measurements such as height and weight were taken from each individual child to assess nutritional status of the children. Initial analysis involved converting the measurements into height for age (HAZ), weight for age (WAZ) and weight for height (WHZ) Z scores which were then compared with the World Health Organisation standard measurements to assess the nutritional status. Logistic regression analyses were performed to evaluate factors associated with the various malnutrition indicators. Overall, the prevalence of malnutrition was 49.7% (95% CI: 44.8-55.1). Undernutrition and overnutrition were estimated at 40.5% (95% CI: 35.6-45.6) and 15.7% (95% CI: 11.3-20.3), respectively. Stunting, underweight, wasting, and overweight/obese prevalences were 30.4% (95% CI: 26.0-35.3), 14.4% (95% CI: 11.1-17.8), 13.7% (95% CI: 9.3-18.2), and 15.7% (95% CI: 11.3-20.3), respectively. Further, 3.9% (95% CI: 0.0-8.9) of the children were stunted, underweight and wasted, 6.7% (95% CI: 2.1-11.8) stunted and underweight, 3.6% (95% CI: 0.0-8.7) underweight and wasted, and 6.4% (95% CI: 1.8-11.5) stunted and overweight/obese. Data on caregiver's knowledge on child nutrition and child care practices was assessed. The majority of caregivers (59.1%) indicated complementary feeding should begin at 24 months, and limited breast milk as the primary cause. The most common food introduced to the children was mashed food (41%). Only 36.3% of caregivers breastfed their children. Majority of the children (84.3%) had inadequate dietary diversity. The median number of meals given to children per day was 3 (range 0-8) with 57.7% having the accepted minimum meal frequency. Majority of the households (74.2%) were food insecure. Based on multivariable results, overall malnutrition prevalence differed by study sites with children in Evurore ward having higher likelihood of malnutrition compared to Nthawa (Adjusted Odds Ratio [AOR] = 1.91, 95% CI: 1.17–3.15) and child's immunization status whereby partially immunized children were more likely to have malnutrition than fully immunized children (AOR = 1.67, 95% CI: 1.03 – 2.72). Overnutrition was predicted by child's partial immunization status (AOR = 2.76, 95% CI: 1.52–5.01), severe household food insecurity status (AOR = 2.49, 95% CI: 1.07–5.81) and the caregiver time for child food preparation (AOR = 0.30, 95% CI: 0.12–0.74). Child's age (24-47 months) (AOR = 2.21, 95% CI: 1.09–4.71), male gender (AOR = 2.37, 95% CI: 1.28–4.54), low birthweight (AOR = 2.19, 95% CI: 1.10–4.60), lack of anthelmintic drug administration (AOR = 4.74, 95% CI: 1.85–11.97) and sharing meals with family members (AOR = 10.04, 95% CI: 2.22–43.83) were associated with underweight. Predictors of overweight/obese included partial immunization status (AOR = 2.76, 95% CI: 1.52–5.01), high birthweight (AOR = 0.32, 95% CI: 0.09–1.10) and severe household food insecurity status (AOR = 2.49, 95% CI: 1.07–5.81). Stunting was associated with child's food allocation practices, particularly sharing meals with family members (AOR = 10.04, 95% CI: 2.22–43.83). The high malnutrition rates are significant, as is the co-occurrence of undernutrition and overnutrition in the same context, suggesting that multiple determinants are at play in child nutrition in this context. This challenge requires extensive and specific interventions on multiple levels that can contribute to decreased malnutrition levels and improved health results for children in the study area