Abstract
Objectives Validating the results of mid-upper arm circumference (MUAC) measurement in 6-59 month-old children when MUAC was measured by community agents in areas where an emergency had been declared. Evaluating the cut-offs used for identifying children suffering from acute malnutrition in Colombia today. Methodology Previously trained community agents and a nutritionist carried out a cross-sectional study for evaluating MUAC agreement, reproducibility and sensitivity in detecting acute malnutrition. Three hundred and six children were assessed in three municipalities where an emergency had been declared in the Cordoba department of Colombia. Results A Bland and Altman plot gave high agreement regarding measurements taken by the community agents and the nutritionist, 94 % of the measurements coming within the agreement limits. The intra-class correlation coefficient gave 0.87 reproducibility; however, validating the criterion for calculating the area below the ROC curve, sensitivity and the impact of the children’s age on MUAC measurements highlighted problems in using 11.5 centimeters as the cut-off. Conclusions MUAC measurement was reliable, had good reproducibility and led to rapid diagnosis of nourishment status in 6-59 month-old children living in areas where an emergency had been declared. Validating the criterion, sensitivity, the impact of the children’s age on MUAC measurement results and improved nourishment status concerning children aged less than 5 years old in Colombia highlighted the need for changing the current cut-off and using 14 centimeters instead.

Keywords
Infant nutrition disorder, community health worker, nutritional status, disaster (source: MeSH, NLM).