



Bridging the Gap

WORKING WITH COMMUNITY HEALTH VOLUNTEERS FOR THE EFFECTIVE COMMUNITY MANAGEMENT OF ACUTE MALNUTRITION: A CLUSTER RANDOMIZED CONTROLLED TRIAL IN TURKANA AND ISIOLO COUNTIES, KENYA.

Summary

Treatment of children with acute malnutrition has failed to achieve high coverage and impact because of barriers in accessing health facilities where treatment services are usually located. This study, conducted in Turkana and Isiolo counties, Kenya, aimed to investigate the effectiveness and the cost of integrating treatment of acute malnutrition into integrated community case management (iCCM). The study shows that working with community health volunteers (CHVs) to treat children with acute malnutrition at the community level increased recovery rate, reduced defaulting rate, and reduced the length of time to recovery compared with treatment of children in health facilities. Most of the CHVs correctly managed children with acute malnutrition. The cost per child treated was lower in the intervention group than in the control group in both counties. The community and the CHVs were generally satisfied with the intervention. Enabling factors for the intervention included community sensitization, CHV training and mentoring, use of simplified tools and protocols and proximity of CHVs to caregivers, among others. Challenges and barriers included low literacy levels of CHVs which affected their learning and reporting, reluctance among some caregivers to accept the new role of CHVs at the beginning, interrupted commodity supply, increased CHV workload, and inadequate financial incentives for CHVs among others. This intervention could accelerate access to treatment of acute malnutrition in areas with limited access to health services and contribute towards achieving the goal of the Kenya Health Policy 2014-2030 of attaining the highest possible standard of health for all Kenyans.



A CHV weighing a child

KEY MESSAGING

- Working with CHVs to treat children with acute malnutrition at the community level increased recovery, reduced defaulting, and reduced the length of time to recovery.
- The cost per child treated was lower in the intervention group than in the control group.
- The enabling factors included: Community sensitization, CHV training and mentoring, use of simplified tools and protocols and proximity of CHVs to caregivers.
- The challenges included: Low literacy levels of CHVs which affected their learning and reporting, increased CHV workload, and inadequate financial incentives for CHVs.

THIS INTERVENTION COULD ACCELERATE ACCESS TO TREATMENT OF ACUTE MALNUTRITION IN AREAS WITH LIMITED ACCESS TO HEALTH SERVICES IN LINE WITH THE KENYA HEALTH POLICY 2014-2030.

Background

Undernutrition is associated with about half of all deaths among children younger than five years.¹ Community-based management of acute malnutrition (CMAM) has been recommended by the WHO.² However, in many countries, these services are only available at the health facility level. This makes them inaccessible to children because of factors such as geographical barriers and indirect costs, hence low coverage and impact of acute malnutrition treatment.³ Consequently, many acutely malnourished children are never treated or receive treatment too late. Integrated community case management (iCCM) is a strategy for managing childhood illnesses, including pneumonia; diarrhea; and malaria, at the community level using trained and supervised community health volunteers (CHVs).⁴ The iCCM package also includes identification and referral of malnourished children to health facilities for treatment and follow-up. Including the treatment of acute malnutrition at the community level in the iCCM package offered by CHVs has the potential to increase access to acute malnutrition treatment services in areas with poor access to healthcare. This aligns with the Kenya Health Policy 2014-2030 whose goal is to attain the highest possible standard of health for all Kenyans by supporting equitable, affordable, and high-quality health services.

Methods

We conducted a cluster-randomized controlled study to assess the effectiveness of working with CHVs to manage acutely malnourished children at the community level (at home or near home) in Turkana and Isiolo counties. In the intervention group, CHVs and Community Health Assistants received training on management of acute malnutrition and refresher training on iCCM. The sessions focused on the use of simplified tools and protocols for the screening and management of children with malnutrition at the community level.⁵

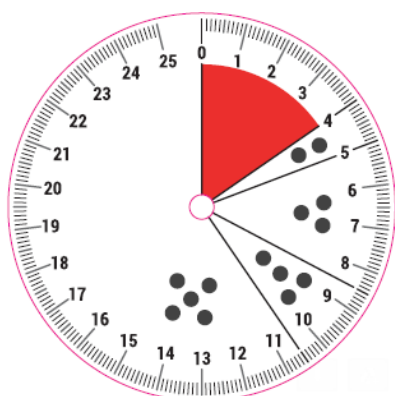
The simplified tools used are illustrated in the pictures below. They included MUAC Tape, weighing scale, and SAM/MAM treatment register. CHVs screened and treated malnourished children at home and referred complicated cases to health facilities, while providing the usual iCCM package. In the control (non-intervention) group, CHVs received refresher training on iCCM. They provided the usual iCCM package, which included screening and referral of the malnourished children to the health facilities.

To assess the effectiveness of this intervention, we compared malnutrition treatment outcomes and treatment coverage in the intervention and control groups. We also assessed the quality of care delivered by CHVs using observation checklists and assessed the economic costs of the intervention. Finally, we explored the enabling factors and challenges in implementing the intervention.

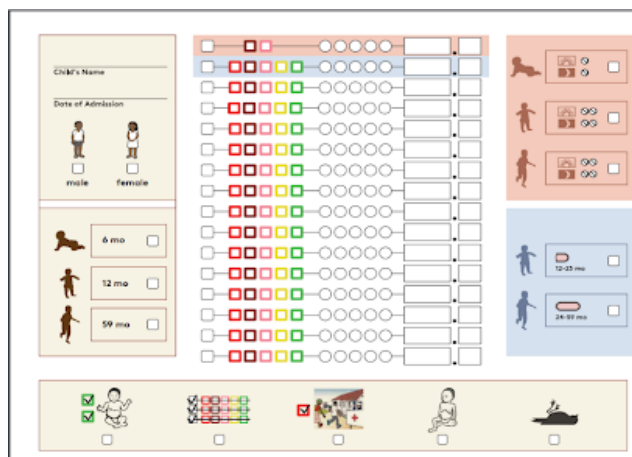
Intervention Tools



Simplified MUAC tape



Simplified weighing scale that incorporated dosage of RUTF



Simplified SAM register

Results

Effectiveness of working with CHVs to manage acutely malnourished children

THERE WAS A HIGHER RECOVERY RATE LOWER DEFAULTER RATE, AND SHORTER LENGTH OF STAY IN THE INTERVENTION GROUP THAN IN THE CONTROL GROUP, IN BOTH TURKANA AND ISIOLO.

The recovery rate was higher in the intervention group than in the control group in both Turkana and Isiolo (Table 1). The defaulter rate was lower in the intervention group than in the control group in both Turkana and Isiolo. The length of stay was shorter in the intervention group than in the control group in both Turkana and Isiolo. Similarly, the average weight gain was higher in the intervention group than in the control group in both Turkana and Isiolo. Non-response rate was similar in the intervention and control groups in Turkana and higher in the control group than in the intervention group in Isiolo. There was only one death, which occurred in the control group in Turkana.

Table 1: Performance indicators for treatment of acute malnutrition

Indicator	County	Intervention Group	Control Group
Recovery rate	Turkana	67.8%	50.8%
	Isiolo	80.0%	49.2%
Defaulter rate	Turkana	9.6%	25.9%
	Isiolo	8.4%	33.9%
Non-response rate	Turkana	22.6%	22.7%
	Isiolo	11.6%	16.9%
Length of stay	Turkana	49.7 days	73.9 days
	Isiolo	49.8 days	71.0 days
Weight gain	Turkana	2.7 g/kg/day	1.8 g/kg/day
	Isiolo	1.4 g/kg/day	0.8 g/kg/day

After adjusting for other factors that could affect the outcomes, results indicate that the intervention significantly increased recovery rate by 17.4 percentage points in Turkana and by 30 percentage points in Isiolo. The intervention was non-inferior to the standard care with regards to recovery rate.

The intervention significantly reduced defaulting by 18.5 percentage points in Turkana and by 26.7 percentage points in Isiolo. The intervention significantly reduced the length of stay by 20 days in Turkana and by 25 days in Isiolo. The intervention had no significant effect on non-response and weight gain.

WORKING WITH CHVS TO MANAGE ACUTELY MALNOURISHED CHILDREN SIGNIFICANTLY INCREASED RECOVERY RATE, REDUCED DEFAULTER RATE, AND DECREASED THE LENGTH OF STAY IN THE PROGRAM. THE INTERVENTION WAS NON INFERIOR TO THE STANDARD CARE.

Quality of care provided by CHVs

Overall CHVs in both Turkana and Isiolo performed well on key of management of acute malnutrition actions. In Turkana, more than 90% of CHVs correctly performed 9/10 actions for the management of acute malnutrition. In Isiolo, more than 70% of CHVs correctly performed 6/10 actions (Figure 1).

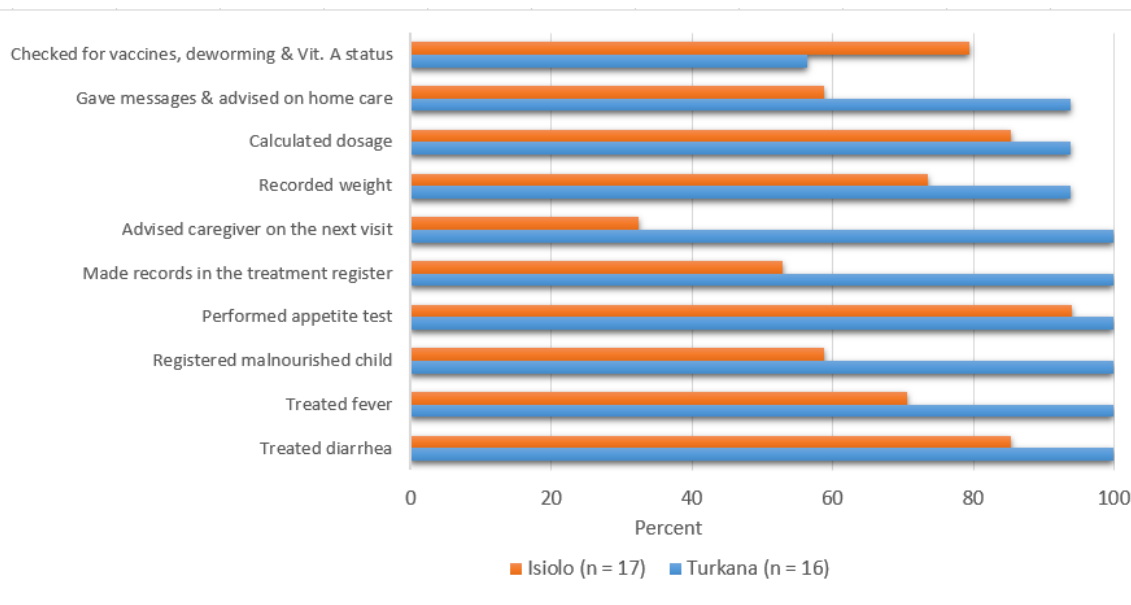


Figure 1: Percent of CHVs who performed actions for the management of acute malnutrition

The effect of the intervention on coverage

The intervention did not significantly affect treatment coverage. In Turkana, coverage was 62.5% in the control area and 61.2% in the intervention area. In Isiolo, coverage was 46.3% in the control area and 51% in the intervention area. The lack of significant changes in coverage may be attributed to scale up of emergency response actions that affected the intervention and control areas thereby obscuring any changes that could have been due to the intervention.

The economic cost of the intervention

In Turkana, the total cost of the intervention was US\$ 83,453.3 in the intervention group and US\$112,116.3 in the control group. The cost per child treated was lower in the intervention group (US\$ 351) than in the control group (US\$ 514). In Isiolo, the total cost was US\$ 77,108.7 in the intervention group and US\$ 82,481.7 in the control group. As in Turkana, the cost per child treated was lower in the intervention group (US\$ 335) than in the control group (US\$ 1057) in Isiolo.

Experiences, enabling factors and challenges of including CMAM into iCCM

Community members were happy with the CHVs' treatment services because it increased accessibility to care. Caregivers were generally satisfied with the delivery of services to their children by CHVs. Similarly, the CHVs were contented with the additional task of treating malnourished children. The facilitators of effective integration of CMAM into iCCM included community sensitization, mentorship; on-the-job training; and supervision of CHVs, use of simplified tools and protocols, immediate deployment of CHVs after training, proximity of CHVs to caregivers, and provision of a stipend to CHVs. Challenges of implementing the intervention included low literacy levels of CHVs which affected their learning and reporting, malfunctioning of some equipment, reluctance among some caregivers to accept the new role of CHVs at the beginning, some community members expecting CHVs to deliver care beyond their scope, interrupted commodity supply, inadequate number of CHVs and increased CHV workload, and inadequate financial incentives for CHVs.

Conclusions

Treatment of acutely malnourished children by CHVs significantly increased recovery, reduced defaulting and reduced length of stay in the program in Turkana and Isiolo, and was not inferior to the standard care. The community and the CHVs were generally satisfied with the intervention. Most CHVs correctly performed most of the critical actions for management of acute malnutrition. The cost per child treated was lower in the intervention group than in the intervention group in both Turkana and Isiolo. This intervention could accelerate access to treatment of acute malnutrition in areas with limited access to health services and contribute towards achieving the goal of the Kenya Health Policy 2014-2030 of attaining the highest possible standard of health for all citizens.

Recommendations

- Subject to further testing and piloting in different settings, this intervention may be scaled up to accelerate access to treatment of acute malnutrition in areas with geographic barriers in access to health services. This is particularly timely in the current context of COVID-19 pandemic, which might have negatively affected the utilization of health services.
- Given that the duration of the study was relatively short, there is a need for continuous monitoring of the quality of care rendered by CHVs to ensure it meets the minimum standards and to identify areas for improvement.
- There is a need to review the CHVs' workload when designing a similar intervention. The number of households served by a CHV, the population density/the distance a CHV has to cover to reach households, and the prevalence of malnutrition should be considered. A higher number of CHVs may be required if the population served is sparsely populated or the prevalence of malnutrition is high.
- For CHVs to effectively deliver the intervention, they should be adequately trained, incentivized and continuously mentored and supervised. The Community Health Services Bill, 2020 should be implemented to solve the problem of financial incentives for CHVs. The use of simplified tools and protocols will contribute to the success of the intervention. The implementation of the intervention should be accompanied by community sensitization to increase uptake of the intervention and to clarify the new role of CHVs.

Contributors

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Training of community health volunteers