CHAMPS

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Case Study

Malnutrition, A Major Health Challenge in Kersa, Ethiopia: Opportunities for Action from the CHAMPS network

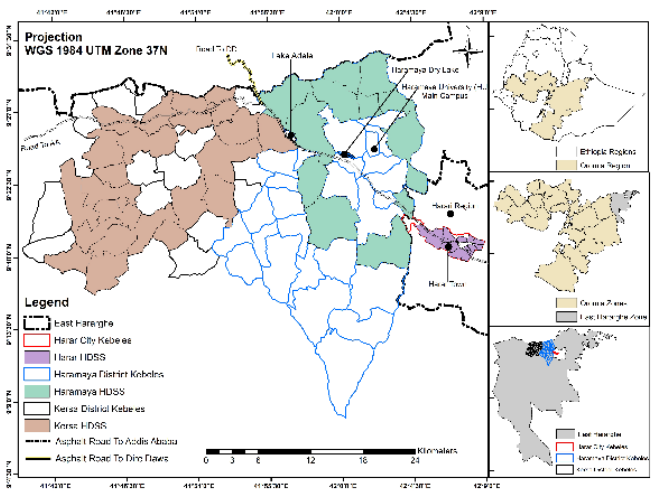
Author: Ketema Degefa, Hararghe Health Research, Haramaya University

BACKGROUND AND CONTEXT

Malnutrition among children under five years of age is a common public health concern in resource-constrained countries. Globally, among children under five, 149 million are stunted (i.e. low height-for-age, a measure of chronic malnutrition), over 47 million are wasted (i.e. low weight-for-height, a measure of acute malnutrition) and nearly 14.3 million are severely wasted, a majority of whom live in low-income countries (UNICEF/WHO/WORLD BANK GROUP, 2020). According to World Health Organization 2019 estimates, 5.2 million under-five children die every year and about 45% of these deaths are linked to malnutrition.

As a result of these high numbers, WHO recommends including adequate maternal nutrition before and during pregnancy and lactation, optimal breastfeeding in the first two years of life, nutritious, diverse and safe foods in early childhood, and a healthy environment, including access to basic health, water, hygiene and sanitation services (WHO, 2019). Those public health actions will contribute to reach Sustainable Development Goal (SDG) 3: ensuring good health and promoting healthy lives for all by 2030 (UNICEF/WHO/WORLD BANK GROUP, 2019). Improving child nutritional status demands sustained and effective programming and engagement (Lancet, 2019).

Figure 1. Kersa, Haramaya and Harar DSS zones



WHO estimates from 2019 indicate that 5.2 million under-five children die every year, and about 45% of these deaths are linked to malnutrition.

The Child Health and Mortality Prevention Surveillance (CHAMPS) network, with seven sites in Africa and South Asia, aims to identify and track definitive causes of under-five child mortality in regions where it is highest, and to generate and share high-quality data to inform policy and public health action. CHAMPS began work in Kersa District in Ethiopia in August 2017, conducting formative research and community engagement activities. While assessing community perceptions on maternal and child health problems, malnutrition was identified as a top priority.

Kersa District in East Hararghe Zone is a drought prone area highly affected by malnutrition. The district has two small towns, Kersa and Water. The total population of the district is estimated to be 199,601; 95% of the population live in rural areas, and 93.8% make their living in agriculture. Sorghum, maize, wheat, barley and pulses are the main crops being cultivated in the area. The Kersa Health and Demographic Surveillance System (HDSS) found that malnutrition (33.9%) was the leading cause of death among children aged 5 to 14 years old from 2008 to 2013 by use of age-specific verbal autopsy questionnaires (Dedefo, 2016).

The Ethiopian Demographic and Health Survey (or EDHS), published in 2016, revealed that 38% of children in Ethiopia were stunted for their age and 18% were severely stunted. The same report indicated stunting was more common among children in rural areas (40%) compared to urban (25%). A recent report from a mini-EDHS (Rockville, 2019) showed that the prevalence of stunting and wasting have decreased considerably, from 51% and 12% in 2005 to 37% and 7% in 2019, respectively. Moreover, the percentage of underweight children has also consistently decreased from 33% to 21% over this 14-year period, as mothers' education and wealth quintile increased (EDHS, 2019). Despite these improvements, CHAMPS data has shown that more needs to be done to address this critical component of child health. The aim of this case study is to highlight the Kersa community's perceptions of child malnutrition and to describe the subsequent public health actions taken to address malnutrition in the area.

RELEVANT PUBLIC HEALTH, SCIENTIFIC AND CLINICAL INFORMATION

Community Perception of Child Malnutrition

The CHAMPS Social-Behavioral Science (SBS) team in Ethiopia conducted a qualitative study from December 2017 to January 2019 exploring health-seeking behavior and community perceptions around malnutrition in Kersa, including in-depth interviews and cultural appraisal. The study identified common terminologies used by the community to characterize child nutritional status (Figure 2), as well as treatment preference among community members. The team found that traditional healers are trusted and accepted as they have the advantage of being close to the community and are less expensive than healthcare facilities. Economic, social and cultural factors were the most influential in regard to health-seeking behavior for management of under-five child malnutrition.

The cultural perceptions analyzed (Figure 2) demonstrate that malnutrition is not considered a condition which requires medical intervention unless it reaches a critical point. These perceptions affect families' decision to take a malnourished baby to health facilities. Various factors influence this decision, including whether relatives or neighbors advise families to obtain medication to treat malnutrition, attempt to treat it at home, or take a sick child to traditional health practitioners. Families also receive advice from elders and religious leaders. Many respondents expressed an opinion that some illnesses are better treated by traditional health practitioners to bring up a lasting solution to the problem.

Malnutrition is not considered a condition which requires medical intervention unless it reaches a critical point.

Survey on health-seeking behavior in Kersa

Figure 2: Common terminologies used by the community to characterize child nutritional status and traditional treatments

Fadhido

Used to describe child malnutrition and considered a problem related to a shortage of foods. Commonly, it is associated with a level of income, it is not perceived as a disease, and it is viewed as a normal childhood growth challenge.

Hudufor (Kwashiorkor)

Identified by the community by swollen bellies and legs, as well as poor appetite, persistent crying, consumption of soil, unhappiness, and watery diarrhea. The community believes that the cause of kwashiorkor is an abdonimal parasite which results in swollen belly, and gradually causes stomach pain. Traditional health practitioners treat it by inserting local plant roots called "Hidda Sarii" inside the anus and rotating until bleeding occurs and the child experiences pain.

Waan Shimbirro

Characterized by the community as when a baby loses weight, vomits, and gets watery diarrhea; was said to happen if a bird flies over a baby. Traditional healers usually give dried, finely crushed powder root from a plant called Baal tokke and mix with goat milk. After the baby ingests the mixture, it is believed they will recover from their illness. Another treatment method used by traditional healers involves welding a tiny metal, hammered at the end of one side and put into a fire to make burns on the chest, the bottom of the belly, and the bottom of the back of a sick baby. This is believed to help the child recover from malnutrition.

Malnutrition among CHAMPS Cases

Using postmortem Minimally Invasive Tissue Sampling (MITS) from key body sites, collection of anthropometric measurements, histopathology, molecular and microbiologic diagnostics, clinical data abstraction, and verbal autopsy, CHAMPS aims to identify specific causes of stillbirths and child deaths. MITS specimens undergo histopathology examination and broad molecular and microbiologic diagnostics to look for etiologies. Determination of Cause of Death (DeCoDe) for CHAMPS cases is carried out by a multi-disciplinary panel comprised of pediatricians, pathologists, microbiologists, obstetricians, and public health experts who review all data and postmortem results to assign causes of death.

During the first year of surveillance, from February 4, 2019 to February 3, 2020, the CHAMPS Ethiopia site gave a final cause of death to 53 of 59 MITS cases. Among the 53 cases reviewed by the DeCoDe panel, 25 were stillbirths, 15 were neonates (1-28 days old) and 13 were infants and children under five (Figure 3). Nutrition status of all children were classified according to the WHO definitions (WHO, 2006). Of the 15 neonates, 10 were born with low-birth weight (Figure 4). Some grade of undernutrition or low-birth weight was also seen in 12 of the 13 infants and child deaths that underwent DeCoDe during the first year of mortality surveillance (Figure 5). Among them, nine were severely malnourished and malnutrition was determined to be the underlying cause of death in those children (Figure 5).

Figure 3: Age distribution of DeCoDed cases

Figure 4: Birth weight of DeCoDed neonatal cases

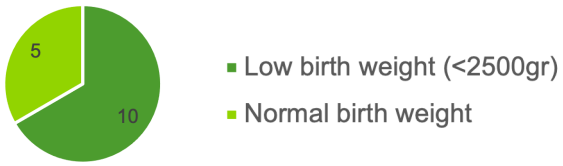
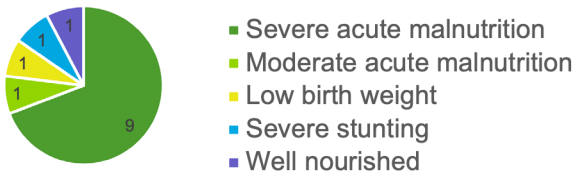


Figure 5: Nutritional status of DeCoDed Infant and children cases



PUBLIC HEALTH ACTIONS

Nutritional Education and Food Preparation Demonstration

In response to the high burden of malnutrition seen in the community and confirmed by CHAMPS data, the site team in Ethiopia conducted nutrition education and training to begin establishing programs to address under-five nutrition in the Eastern Hararghe Region.

In collaboration with the CARE Ethiopia GROW Project, the CHAMPS site team organized trainings for lead mothers (mothers who have been selected by the local communities to support health promotion activities with local health providers) on how to prepare balanced diets for children and women of reproductive age. Mothers were the main target for this intervention, with the aim of providing education around proper child feeding and breastfeeding. The training took place in March, 2019 and consisted of a field visit and food demonstration event at two GROW project sites in a neighboring district.

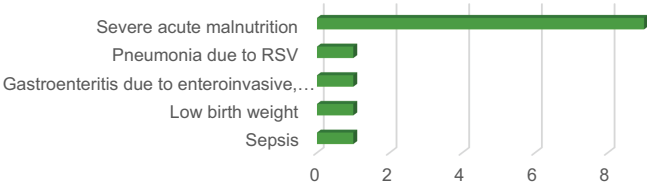
During the visit the site team were joined by 20 lead mothers from Kersa and government officials from the Ministry of Health, Women, and Child Affairs and the Office of Agriculture. They were shown farms and gardens that had been developed by GROW Project beneficiaries. Food demonstrations showcased the different types of food GROW participants had been trained to cook and provided an opportunity for learning and knowledge exchange across groups; beneficiaries and the GROW team shared their experience developing successful gardens and receiving educational lessons, all geared towards improving their livelihoods. The field visit also gave the CHAMPS team a clear view of ongoing activities and approaches used by the CARE GROW Project. They could then take back to the CHAMPS catchment area to address malnutrition.

CHAMPS and CARE Ethiopia teams with women in Kersa and Meta.

Basic Nutrition Training

In May 2018, the CHAMPS SBS Team prepared nutrition handouts and provided basic training for health extension workers (104 people), community-based organizations (92 people) and religious leaders (102 people) in both Harar and Kersa. The material focused on nutrition-related aspects of childcare and health-seeking behavior, and included pictorial representations of the messaging for increased readability for all literacy levels. More than 4,000 people received health education sessions focused on basic nutrition at the community, health center and health post level.

Figure 6: Underlying causes of death determined in infants and children



In addition, community feedback was collected from health extension workers, community-based organizations and religious leaders in order to assess the value and practicality of the training (Figure 8).

Monday Clinics

Pediatricians affiliated with CHAMPS have been supporting the under-five outpatient departments at Kersa and Water Health Centers every Monday and Tuesday, respectively. The purpose of the clinics is to assist with treatment of children visiting the clinics, including providing diagnoses for malnutrition. The clinics also serve as a place for national health staff to be trained on how to manage the most common diseases among children under-five, as they are led by a pediatrician. Healthcare workers at the clinics perform medical check-ups, provide medications, screen for nutritional status, and make referrals to the hospital.

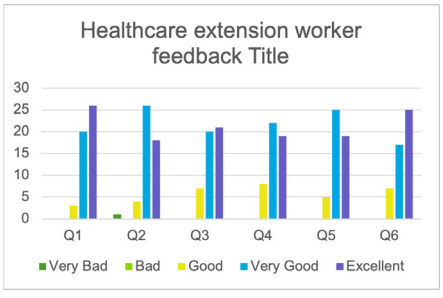
Malnutrition Screening

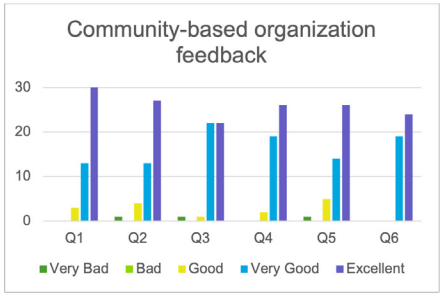
The CHAMPS clinical and social behavioral science (SBS) teams have started conducting nutritional status screenings at the community level as part of ongoing community engagement activities. These screenings provide opportunities to link cases of children with severe malnutrition to health extension workers at the health post or refer them to the nearby hospital. So far, CHAMPS clinical and SBS teams have conducted three health outreach screenings and linked cases with local health extension workers to follow the families and provide care on immunizations and care and follow-up on nutritional status of children. Some cases are also referred to the nearby hospital for further check-up and in-patient stay at the nutrition rehabilitation unit.

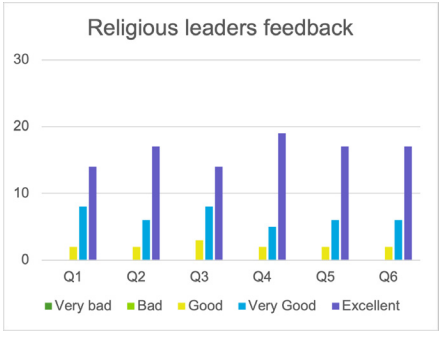
CHAMPS-affiliated pediatrician and attendees at Monday clinic.

Figure 8: Feedback on nutrition training, by group

Q1: How useful was the training?*
Q2: How participatory was the session?
Q3: Do you feel like your learned something new?
Q4: Are the handouts useful?
Q5: Do you intend to use the handouts when you talk with the community?
Q6: How did you like the mode of delivery







Health Education

As previously mentioned, the SBS team developed health education materials focused on the basic concepts of good nutrition. These handouts were used to train health extension workers, community-based organizations and religious leaders.

Additionally, the team produced radio episodes on breastfeeding, complementary feedings, and types and signs of child malnutrition that were aired by local radio stations. The radio program reaches approximately 25,729 households in Kersa Demographic and Health System. Similarly, the teams provide health education on nutrition for patients at Kersa and Hiwot Fana University Hospital during morning health education sessions. Health education sessions are part of the hospital's regular services and the CHAMPS team has joined the hospital team in the past, with plans to participate on a regular basis for increased impact.

CHAMPS team conducting out-reach and malnu-trition screening.

CHAMPS team conducting health educa-tion sessions.

LESSONS LEARNED

- Cross-sectoral learning sessions conducted by CARE-Ethiopia team, CHAMPS team, and government officials on child malnutrition demonstrated an effective approach to teach the community, share experiences, and to test knowledge among respective team members in the district to reduce malnutrition.

- Photo-elicitation interviewing (a qualitative interview technique where researchers solicit responses, reactions, and insights from participants by using photographs or other images as stimuli) and picture workshops for community members are good approaches to understand community perceptions of malnutrition and to provide education around health feeding practices.

- Nutritional status screenings at the community level as part of community engagement activities provide an important opportunity to connect severe cases of malnutrition with health extension workers at the health post or refer to the hospital.

- The Kersa community has their own type of malnutrition taxonomy and local definitions, whic h has some similarities to scientific classifications and this will help as to further explore child malnutrition perspectives.

RECOMMENDATIONS

- Continue reviewing data from CHAMPS cases to better understand the burden of malnutrition in the community in order to engage the local health system leaders in nutrition education programs.

- Regular nutrition education sessions, including food demonstrations, at the community and health-facility level are needed to reach community members for improving healthy feeding practices for pregnant women, and mothers of infants and children.

- Work with local health staff and health authorities to improve screening of malnutrition among children from Kersa district.

- Optimize current nutrition programs to fully utilize resources and alleviate child malnutrition.

- Identify common ground between clinical treatment of malnutrition and treatments informed by traditional culture beliefs and practices by way of consensus-building workshops in the community and engagement with traditional healers in the community.

NEXT STEPS

To continue to reduce malnutrition, the CHAMPS team will:

- Continue the health education programs on child malnutrition at Hiwot Fana Hospital and Kersa and Water health centers.

- Work with other nutrition-focused NGOs in Ethiopia and Eastern Hararghe to share and analyze nutrition-related cause of death data to better understand and address under-five malnutrition in the area and develop programmatic interventions to reduce the burden of malnutrition contributing to child mortality.

- Analyze our data on child malnutrition and share with local and national health policy makers to inform policies and programs aimed at reducing malnutrition and associated child mortality.

- Support implementation of the experiences and techniques obtained from the food demonstration to CHAMPS catchment community members in collaboration with local health extension workers.

- Conduct food demonstrations and malnutrition checkups during outreach campaigns and nutritional education sessions in Harar, Haramaya and Kersa districts.

- Identify funding opportunities and develop research proposals focused on malnutrition and micronutrients deficiency, including working with key stakeholders on regional and national programs.

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Case Study Writing Lead

Ketema Degefa

Hararghe Health Research

Haramaya University

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