Maternal Time Poverty Drives Suboptimal Complementary Feeding Practices in the El Niño Affected Eastern Ethiopia Community

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Abstract

**Background:** Ethiopia is affected by recurrent drought and food insecurity crises including from El Niño, the climatic change that lasted from mid-2014 through 2016 and caused the failure of the rainy seasons in eastern Ethiopia. The event is expected to have a detrimental effect on the already suboptimal complementary feeding practices. However, there is a lack of research on how climatic events affect child feeding. Hence, the study was intended to explore how El Niño influenced the complementary feeding practices and experiences of the food-insecure community of eastern Ethiopia from March to September 2016.

**Methods:** This study was an exploratory qualitative study that used a phenomenological approach. The study was conducted in the food-insecure setting of Gale Mirga kebele of Kersa district. The study involved 11 focus group discussion (FGD) comprising a total of 76 participants, including three FGDs with mothers, three FGDs with Health Development Army leaders (HDA); two FGDs with fathers, two FGDs with traditional birth attendants, and one FGD with religious leaders. The Atlas.ti software was used for coding and thematic analysis.

**Results:** El Niño aggravated failed crop and livestock loss were reported to directly reduce the quantity and quality of food available to feed young children, resulting in more frequent skipping of meals, less animal protein sources and over-reliance of cereal-based food. The impact of El Nino on livelihoods often resulted in both parents working away from home with child feeding delegated to older children or other family members. Maternal absence from home was a barrier to participation in community-based nutrition activities. Short birth spacing and low fathers’ involvement in feeding also reduced the time available to mothers to devote to child feeding.

**Conclusions:** The maternal suboptimal time allocation to child feeding is central to the poor complementary feeding practices in El Niño stricken food-insecure settings of Eastern Ethiopia. The women should be supported with climate-resilient livelihoods options in their villages, thus allowing them both to feed their children and attend nutrition education sessions with HDA. Such sessions should focus on food processing demonstrations to improve the nutritional quality of plant-based complementary foods.

**Background**

The complementary feeding period represents a transition from exclusive breastfeeding to the addition of family foods at around six months of age. Optimal complementary feeding practice is one of the
evidence-based early year interventions for children 6–24 months. The promotion of optimal complementary feeding protects children against micronutrient deficiencies, the high rate of growth faltering that becomes irreversible after two years of age and recurrent bouts of infections and death (1, 2).

In a resource-limited setting, complimentary food is prepared at home using traditional methods. Meeting optimal complementary feeding recommendations using homemade foods, which is the extension of family foods in Ethiopia, has remained a challenge (3). According to the Ethiopia Demographic and Health Survey, a low proportion of children achieve the recommended diversified diet (14%), minimum meal frequency (45%) and minimum acceptable diet (7%) (4). These practices promote the vicious cycle of low food intake, nutrient deficiency, infection and loss of appetite (5).

Maternal and child nutrition improvement is intrinsically linked to sustainable agriculture (6). However, ongoing climate change continues to influence the food system by reducing crop production, altering the food availability, food prices and supply chain infrastructure (7). Since 2014, climatic change has either slowed the progress in reducing undernutrition or increased the number of undernourished children (8). The effect is marked in sub-Saharan Africa countries, where the rural poor have the least resilience and adaptability to climatic shocks. Subsequently, the climatic change increases inequality, threatening the progress toward sustainable development goals (9).

Ethiopia is affected by recurrent drought and food insecurity crises including from El Niño. El Niño is a climatic event marked by the abnormal warming of sea surface temperature in the central and eastern equatorial Pacific Ocean, which causes precipitation anomalies leading to either drought or heavy rain (10). In Ethiopia, El Niño started in mid-2014 and worsened in 2015, and caused failure of Kiremt (boreal summer that lasts from June–September) rainfall in Ethiopia (11) and the second rainy season of belg (lasts from February–May). During this time, the eastern part of Ethiopia received the lowest level of rainfall in 50 years. As a result, cereal yields were slashed by as much as half, leading to a need for urgent humanitarian assistance for people who lost food, water and livelihoods (12). Such climatic shock has been shown to affect the underlying nutrition drivers such as food security, care capacity, health services, water and sanitation (13).

Even when climatic conditions are predictable, child undernutrition and its consequences are a significant priority public health problem in eastern Ethiopia. Wasting is unacceptably high (14), and that increases the associated high risk of morbidity and mortality (15). This is likely to worsen for rural children during El Niño and remain above the global goal of five percent (15). Gillespie and van den (2017) highlighted a disconnect between agriculture and nutrition, in a way that agriculture continued to be both the livelihood and the source of risk for rainfed farmers, the most nutritionally vulnerable rural community. Hence, there is an urgent need for leveraging agriculture for nutrition (16), especially for the high-risk rural children (13).

The agriculture and nutrition disconnect is complicated by the paradoxical actions of rural food security crises, social protection, and child nutrition. That is, while the promotion of optimal infant and young
child feeding could prevent as many as 28% of child deaths in Ethiopia, interventions are not needs-based (17). For instance, the Ethiopia productive safety net program (PSNP) provides food and cash transfer for 7.9 million food-insecure households in return for participating in public works such as the protection of natural resources. PSNP uses geographic targeting, while child nutrition conditions require broader programmatic coverage based on the need (18). As a result, in December 2015, El Niño added 10.2 million people for emergency assistance in addition to those under PSNP(19).

Complementary feeding interventions should consider the contexts of feeding, including the needs of the target population, the traditions of child feeding, and the state of food insecurity(20). There is a need to understand better how climatic events such as El Nino affects complementary feeding practices in the affected communities (18, 21). Such understanding will critically inform interventions that are responsive to community needs (22). Hence, this study aims to explore how El Niño influences the complementary feeding practices and experiences of a food-insecure community of eastern Ethiopia.

Methods

Study Area And Setting

The current study was conducted in Gale Mirga kebele (lowest administrative unit in Ethiopia) of Kersa district of eastern Ethiopia from March to September 2016. Kersa district has 35 kebeles, each comprised of approximately 1000 households. The district was one of the hotspots of the El Nino drought. According to evidence from Kersa Demographic and Surveillance data, the district crude birth and death rates is 37.2 and 7.8 per 1000 population, respectively. The district infant and under-five mortality rates were 46.9 and 77.4 per 1000 live births, respectively (Aseffa et al., 2015). The mortality figures are comparable to national level infant mortality (48 per 1000 live births) but higher than national under-five mortality (67 per 1000 live births) rates (4). The Sustainable Development Goal has set a target to reduce the under-5 mortality rate to less than 25 per 1,000 live births (23).

Study Design

This study was an exploratory qualitative study that used a phenomenological approach that aimed to explore how El Niño influences the complementary feeding practices and experiences of food-insecure communities of eastern Ethiopia. The study involved the Health Development Army Leaders (a volunteer women that lead of a group of 25 to 30 women and are responsible for delivering health message in rural Ethiopia), mothers, and fathers of children less than two years of age, traditional birth attendants and religious leaders. Data collection and analysis took place without deciding a priori the sample size, i.e., data collection went on until the inquiry revealed no new data.

Sampling Procedures
Overall, the study participants inclusion was justified based on their position in society for Health Development Army (HDA) leaders; community segment equipped with specific cultural knowledge for current and previous traditional birth attendants and active caregiving role for mothers and fathers of infants and young children less than two years of age.

To access the study participants, first, a letter of support was sent to Kersa district health office, that linked the research team to the health extension workers of the Gale Mirga kebele. The health extension workers provided the research team with information on the estimated number of eligible study participants, which informed the sampling procedure and suitability of venues for conducting the focus group discussions (FGD).

FGDs were held at local primary school classrooms which provided a quiet and private environment. Based on the numbers of HDA leaders, traditional birth attendants, and the religious leaders, all were invited to participate in separate FGD. On the other hand, the mothers and fathers of children were invited to participate based on their proximity to the meeting place to prevent unnecessary time loss for more distant participants. Separate FGDs were conducted for each type of participants.

**Data Collection**

Each FGD was facilitated by two researchers of Haramaya University who had a master’s degree qualification, previous experience of moderating FGD, and excellent native language (Afaan Oromo) proficiency. Focus groups were audio-recorded and observed, and a moderator took notes. At the start of each focus group, a moderator acknowledged the presence of the audio recording equipment, assured participants of confidentiality, and allowed people to withdraw if they were uncomfortable with being audio recorded.

Participants were asked about what food groups were included in the complementary foods given to their young children and how that was affected by El Niño aggravated food insecurity, the specific role of FGD participants in child feeding and nutrition, and complimentary food processing and preparation methods.

**Data analysis**

The focus groups discussions were transcribed verbatim and translated into English. The authenticity of the transcripts was verified by two authors who moderated the discussion. The two authors read and discussed the transcripts and compare it against the original recording. The data collection and analysis were conducted simultaneously to identify areas for further exploration in subsequent focus groups. A general inductive approach was used for the analysis. The final version of each transcript was imported into ATLAS. Ti 7 for coding by AA (24). The initial codes were reduced into sub-themes and themes.

**Results**
A total of 76 people participated in the study, across eleven groups including three FGDs with mothers (n=20), three FGDs with Health Development Army leaders (n=23), two FGDs with fathers (n=15), two FGDs with traditional birth attendants (n=11), and one FGD with religious leaders (n=7). There were 22 male and 54 female participants, and all were older than 18 years old. Almost all study participants were farmers, and petty trading was a frequent alternative income-generating activity for HDA leaders, birth attendants and mothers.

The analysis resulted in the emergence of three major themes. These themes were food insecurity, livelihoods and coping strategy, and caregiving domains. The interaction of these themes and their relationship with child suboptimal complementary feeding is shown in Figure 1.

Food insecurity

All study participants indicated that the district, specifically their kebele had been affected by a variable degree of seasonal food insecurity; and also mentioned that the selected households had benefited from the Productive Safety Net Program (PSNP). The PSNP provides predictable food and cash transfer and livelihood protection to the most disadvantaged households, and in return, the household members contribute labour to the environmental protection activities. However, the level of food insecurity associated with El Niño was worse due to the previous years drought. The cumulative water insecurity due to El Niño had resulted in the failed crop and livestock loss, which directly reduced child food intake.

The participants agreed that the inclusion of animal source foods for a child is a challenge, and it was affected by the livestock loss due to recurring drought and El Niño. The community key informants raised how the introduction of improved agricultural products to their community gave them the hope to regain their village productive assets. A religious leader in the age range of 60 to 64 years old said:

“Villagers used to have cows, milk and milk products, sheep, and small-scale poultry. Though some households still owns some, last four-drought year has brought deadly livestock diseases that resulted in a significant loss. A research institution has provided us with four heifers and a bull for our village.”

The participants also viewed the variability of food available throughout the year and large family size, as primary reasons for the persistent pattern of undernutrition in their village. A 45 to 49-year-old HDA leader said:

“The main harvest season of our major food crop, sorghum, is in February. Villagers rely on it for three to six months (June). However, the last three years were tough. Villagers purchase food for most months of the year. Previously, lower levels of child undernutrition occur which peak from July to September. Now, large numbers of children are affected by undernutrition throughout the year.”

Livelihood and coping strategy
The other significant discussion was focused on how food insecurity associated with El Niño has gradually normalised the coping strategies used, such as reducing food consumption, reduced meal frequency, selling productive assets and seeking urgent government assistance. When asked how children are affected by these strategies, participants indicated that children also share the coping behaviour of reduced food consumption and frequency not only because of availability/food access issues but also because parents stay away from home.

The most common reason that kept parents - especially mothers - away from their children was to work outside the home/ village. The mothers frequently went to the nearest town/cities (Dire Dawa city and Kersa town) for petty trading, including selling firewood and charcoal produced locally and returning home in the evening. On the other hand, men (older boys and fathers) work as daily labourers, staying and working in urban areas and only visiting the family periodically. Participants also reported that both sexes share petty trading and daily labour activities. In the absence of the parents, the child care responsibilities are delegated to extended family members and girls. Temporary rural-urban migration was identified as a barrier to maternal and child caregiving described in the following theme.

**Caregiving practices**

The typical complementary foods of the community were traditional family foods (with/without modifications). The typical child food modification measures mentioned by participants were mixing local ingredients, mashing, and adding extra oil, butter, fruits, or vegetables. However, mothers did not implement these measures routinely. The family food modification and quality enhancement depended on the season and the state of the child's health. While the seasonality is related to the availability and access to foods, which has been severely affected by El Niño; child illnesses and associated health facility visits have enabled counselling on feeding practices and family food modification. A mother found in the age range of 20 to 24-year-old said:

“A different food is prepared when a child gets sick or malnourished. caregivers buy potatoes, carrot, beetroots, cabbages, and other vegetables only when the child gets sick. Even during illness, the varieties of the foods given to the child depends on the seasonal availability.”

For complementary foods, caregivers typically limited ingredients to one food group, including grains, roots, and tubers rather than diversifying by adding another plant and animal source foods. The mothers attribute the current composition of their child's diet to experience they gained from people they know, recurrent and prolonged drought and associated water insecurity from El Niño. A mother in the range of 30 to 34-year-old said:

“The child feed on family foods after six months. The child has given injera, a cereal-based food made from sorghum with some stew made from legumes. The mothers have been given orientation on how to prepare child foods from 16 ingredients of all varieties. However, villagers cannot afford it. Therefore, caregivers make the child food with limited ingredient(s). The better-off family’s babies can have bottle-feeding.”
The coping and livelihood strategies related to El Niño has altered women’s time use, a central theme that emerged in this study. The maternal time allocation for child feeding was negatively influenced by staying away from home for work, and the short birth intervals that result in mothers needing to care for multiple young children. Furthermore, fathers had low involvement in childcare due to temporary absence from home, e.g. because they are going to cities for work, and even when they are home, they do not typically look after children. The limited role of fathers in caring for children has put the child-caring burden disproportionately on the women; hence, cost the mother more time.

The livelihood strategy put in place to mitigate the influence of the El Niño has led to low maternal time allocation around childcare, and negatively influenced mothers participation in community-based complementary feeding activities. That is, the mothers are often away working/trading when health extension workers and Health development army conduct nutrition education activities. When the mother is available, the focus of nutrition education had limited complimentary food preparation demonstrations.

The community health workers involvement has led to discussions related to nutrition activities during pregnancy and delivery during El Niño triggered drought. The community recognises the positive role of community health workers in the birth preparedness, and institutional delivery. The health development army support and nudge women to give birth at health facilities, giving an excellent opportunity to counsel the mother on infant and young child feeding, increasing birth spacing, and other maternal and child health care services. Still, participants mention the short birth interval as a primary concern in the community contributing to child undernutrition. A previously traditional birth attendant in the age range of 55 to 59 years said:

“All Women must give birth at the health facility. Health volunteers encourage and support women to start breastfeeding immediately. ...Concerning colostrum, there are two types of colostrum. The one that older babies get from their pregnant mother[with a narrow birth spacing] and the one the newborn gets from his mother at birth. The one that the baby feeds on after birth is clean and good. The one that child feed on while the woman is pregnant has water that causes swelling of the head and nutritional deficiency.”

Parents and key informants agree that health development army leaders are a group that is primarily selected by governmental and non-governmental stakeholders to undertake capacity building activities, including training and creating awareness about infant and young child feeding, which they cascade back to their community members. However, cascading of acquired knowledge and skills, and applications of improved practices are limited or short-lasting. A health development army leader in the age range of 40 to 44 years old said:

“Community members have received orientation in multi mix complementary food preparation and shared it with women in their village. However, the women use it briefly and stop it due to lack of awareness, necessary ingredients, lack of knowledge and skills, and other women are tired of processing it separately from family foods.”
Concerning the males/fathers involvement during El Niño triggered drought, they neither attended nor actively supported the process of infants and young child feeding activities, including the community-based food preparation demonstrations as they stay away from home to support their family. The low level of male involvement was thought to contribute to the late initiation of complementary foods, provision of sweets with added sugar such as biscuits, and over-reliance on unmodified family foods at an early age. A 40 to 44 years old father said:

“Infant and young child feeding is the primary responsibility of a woman. The male has to work and bring foods home from the nearby town. If the fathers comes from the farm, he does not have anything to bring. Probably, he asks whether the child has had food or tell the mother to feed the child if the child cry.”

Participants agree that mothers disproportionately shouldered the effect of El Niño triggered food insecurity, the coping strategy, along with their reproductive role and childcare. Women's many roles collectively led to suboptimal time allocation between child feeding and household chores, on-farm and off-farm activities. Participants agreed that women are not available at their home in the afternoon to bring food for the family. The mothers acknowledge that their absence with the low child’s father involvement affects the overall child feeding practices and intrahousehold food distribution. That is, older children are eating more of the food meant for younger children. A 25 to 29 years old mother said:

“In the afternoon, the women go to the market, or farm to protect crops from wild animals such as monkeys; hence they do not have time to prepare child foods. Instead, older children look after the child, prepare and feed in the afternoon, and women prepare the food in the evening. One of the concerns for the mothers absence is that older children share child food.”

The community has felt the high burden of undernutrition, and its consequences during El Niño triggered drought. The problem has created a massive demand for interventions, and the community members think that the problems are beyond the capacity of the local health workforce, such as health extension workers. A 35 to 39 years old health development army leader and a mother said:

“The children get malnourished both when feed on breastmilk alone and also after start giving additional foods. If we have two young children in the same house and feed them the same type and amount of foods, one can get malnourished while the other remains normal. The malnourished child gets better after receiving the treatment. So, the problem might be from the mother. If the family failed to provide the child with better foods, the child would return to the clinic with malnutrition within three or four months.”

Discussion

This study aimed to explore how El Niño influenced complementary feeding practices in the food-insecure setting of eastern Ethiopia community. Central to young children's suboptimal complementary feeding practices were reduced time the mothers allocate for childcare and feeding. The time mothers spent with a child was reduced by mothers working away from home (due to crop and livestock losses) and further
exacerbated by short birth spacing, and low levels of childcare provided by fathers. Maternal absence from home was a barrier to participation in community-based nutrition and health educational activities.

Maternal time constraints that followed El Niño events predispose children to suboptimal complementary feeding practices. Optimal time allocation is a critical component of caregiving. According to UNICEF conceptual framework, care is defined as “the provision in the household and the community of the time, attention, and support to meet the physical, mental, and social needs of the growing child and other household members” (25). In this regard, while the maternal time allocation has an indirect path to child undernutrition, and the inappropriate complementary feeding directly leads to undernutrition (26).

When mothers stayed at home, drought increases the time required to get water to prepare children's foods, given women must walk to and from water sources (27). The limited mother-child interaction time also explains differences between Ethiopian women who practice prolonged breastfeeding (76% of children age 18–23 months still breastfed), and exclusive breastfeeding (only three out of five mothers practice exclusive breastfeeding for six months), (28). Thus, the maternal time allocation is an essential modifiable child feeding factor that can improve feeding behaviours (29, 30), and enhanced social support is an integral part of it (31, 32).

The World Health Organisation recognises, recommends and advocates for governments to have supportive regulation for mothers working in the formal institutions to get maternity leave, facilities, and time for breastfeeding in the workplace (33). Accordingly, the revised Ethiopia labour law grants female employees one month of paid pre-natal and three months of post-natal leave. That is a minimum of 120 days of maternity leave, a probation period of 60 days and no paternity leave (34). However, rural Ethiopian women, who are engaged in work outside of formal institutions but are paying taxes and contributing to the economy through informal sectors, neither benefit from maternity leave nor have comparable schemes in place. The absence of a systematic strategy to keep the rural child with their mother must be acknowledged and addressed in an environment where traditional mothers role changes continually. That is, the proportion of women working in agriculture, who are currently married and have five or more children, is increasing; and when employed in non-agricultural sectors, 46% of women are not paid at all for their work(4). The situation for such families represents a source of inequity in Ethiopia(35).

Giving sufficient time for childcare is essential but not sufficient to make a difference in the quality of feeding practices. For instance, Jain and Zeller (2015) reported that providing full-time child care makes no difference in the food consumption of children compared to maternal time outside the home that has a positive effect on boys food consumption (36). That implies the need to balance maternal time allocation with livelihood activities. The balance can be achieved by empowering the women economically and enabling them to use available resources through nutrition skills (18, 37).

Women economic empowerment can be in the form of alternative climate-resilient livelihoods that keeps the mother with her child in her village. Such economic opportunities drive an equitable share of child caregiving between man and women by increasing women bargaining power, thus less time constraint.
Furthermore, economic empowerment helps women to hold and control property and contribute to child caregiving expenditure similar to men (38). According to the United Nations Development Programme, the economic empowerment should be tailored to the women's need, the settings such as rural area, and vulnerabilities, which includes recurrent climatic shocks and food insecurity (39). In line with this argument, evidence from 12 African countries showed a positive association between the economic dimension of women's empowerment and meeting the recommended infant and young child feeding (40).

The economic opportunities might also have negative consequences on women's time, which can be simplified by sharing child care burden with other household members (41). The higher risk of business start-up failures among women can be mitigated with financial and technical support and linking their business to market (42). In this regard, local leaders have a pivotal role to create enabling business environment and help the women deal with the changes in power relations and its consequences in the households (39).

The role of non-maternal carers is recognised in the UNICEF conceptual framework of child care (25). Our study showed the role of non-maternal caregivers contribution, especially older siblings in the household by providing care and also sharing younger children's food when the mother is away from home. Similarly, a study conducted in Congo recognises the mother as the single main contributor for child feeding, but less than the combined care provided by fathers, grandmothers, aunts, siblings, and cousins (43). While the Ethiopian infant and young children feeding initiative recognise the importance of supporting partners and family members (18), there is limited evidence on the level of its implementation. Given the key roles non-maternal caregivers play in child care, it is vital that policy address this as part of a comprehensive nutrition plan by involving older siblings and carers in HDA nutrition demonstrations.

Our study showed minimal fathers’ involvement in child feeding with or without prolonged work and time spent away from home during the drought which largely reflects the cultural norm of the fathers’ role being mainly limited to income generation (44). The maternal time allocation and competing demands determine whether the mother is with the child or away during the day, and who feeds the child complementary foods (35). The male involvement in household work and child-rearing empowers the women by alleviating competing demands on her time (45). Ethiopia nutrition policies and legislations acknowledge the implications of the active involvement of the mother and father in child feeding. The low father’s involvement in child feeding implies problems of translating the nutrition policy that considers the role of the mother and fathers in child feeding; also continued uneven burden the mothers have in the child care and feeding (18).

Contrary to our findings, evidence from Southwestern Ethiopia shows high paternal involvement in terms of presence, finance and childcare and feeding (46). The difference might be related to stable local livelihood during lean seasons that keep the fathers close to the family, and the expectations of fathers might be different from our study population. The paternal economic stability reduces the risk of a severe form of coping strategy such as reducing meal frequency and amount; gives the mother freedom of child
feeding decisions, food procurement and preparation (27). The study conducted in southwestern and Northern Ethiopia also showed the favourable implication of fathers involvement in child feeding (46, 47) and better linear growth after controlling for food security status (46).

Therefore, nutrition messages can be directed toward fathers and lead to a positive health impact (48, 49). The course of actions for engaging fathers to improve the infant and young child feeding practices can be designed to be embedded in their social networks, which has shown positive results in Kenya (50–53). Similarly, to boost the momentum of nutrition actions of food-insecure Ethiopia households, the child feeding message can be disseminated via a platform of men groups in their cultural settings. Furthermore, creating work opportunities closer to home might catalyse the fathers' involvement in child feeding by improving their availability for child feeding messages.

The current study highlighted that community health workers did not focus on enhancing maternal skills around child feeding; instead, they focused on the treatment of acute malnutrition. For food-insecure communities that rely on cereal staples, the dissemination of familiar skills such as germination can contribute to the prevention of child malnutrition by improving the quality of complementary foods (54). Such familiar food processing skills can be easily expanded and adopted by mothers, as demonstrated in rural Malawi (55). However, unleashing the potential of germination and other child feeding skills demands reassessing the limited time and focus the Ethiopia community health workers allocate to maternal nutrition skills (56), the HDA leaders skill and improving access to time and labour-saving technologies to prepare the complementary foods (18).

Still, routine community health workers activities might not be sufficient during extraordinary events. In this regard, the government of Ethiopia recognises drought as a unique situation that needs enforcement of minimum standards of child nutritional services. For instance, the government use Ethiopia Productive Safety Net Programme (PSNP) public worksites to deliver training on key nutrition practices. Furthermore, PSNP provides mothers with infants food or cash transfer without participating in public work. However, provided recurrent extreme climatic events and more intensified climatic change in the future, the PSNP can become a suitable platform to link the cash or food transfer to participation in child feeding skills enhancement sessions (57), and stakeholders should operationalise the minimum complementary foods standards and help its production by and for people in these local communities (18).

**Conclusions**

The maternal time allocation is central to suboptimal complementary feeding practices in El Niño exacerbated food-insecure settings of Eastern Ethiopia. The women should be supported with climate-resilient livelihoods options in their villages, thus allowing them to feed their children and attend education sessions with HDA. Future work should look into viable work opportunities for men in their village so that they too spend more time around the child. Considering should be given to the dissemination of child feeding messages to fathers through social networking opportunities such as the men's group to encourage them to play a supportive role with child feeding.
The focus of community health workers should be repositioned from conveying oral nutrition messages to skill-based activities so that mothers are equipped with adaptive capacity to El Niño like events using existing resources. Repositioning the focus will require upskilling workers on the household-level food processing methods such as germination to improve plant-based diets. This requires improving the training of Health Extention Workers and HDA to ensure that messaging is consistent and correct. Further investigation is warranted to understand why nutrition-related practical activities are featured so poorly in health promotion offerings, and opportunities and challenges to delivering such skills through HDA structure.

**Abbreviations**

HDA
Health Development Army

HEW
Health Extention Workers

FGD
Focus Group Discussion

UNICEF
United Nations International Children Emergency Fund

**Declarations**

**Ethics approval and consent to participate**

The study was approved by the Institutional Health Research Ethics Review Committee (IHRERC) of Haramaya University and Human Ethics Advisory Group, Faculty of Health (HEAG) of Deakin University. Written informed consent was obtained from all participants.

**Consent for Publication**

Not applicable

**Availability of data and material**

The datasets used and/or analysed during the current study are available from the corresponding author upon reasonable request.

**Competing interests**

The authors declare that they have no competing interests

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Authors’ contributions

A.A.I conceived of the research idea. A. A.I, S.L, A.S. and A.A developed the full proposal and conducted the fieldwork, data processing and analysis. A. A. I. have drafted the manuscript. G.E., N.A., K.J.C., and R.L have contributed to the final manuscript by providing critical feedback in discussing the results and its interpretation.All authors have read and approved the final manuscript.

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