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TRANSFORMATION TOWARDS SUSTAINABLE
AND RESILIENT WASH SERVICES

**Maintaining behaviour change: innovations in demand-side
sanitation and hygiene interventions**

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This paper explores innovations in demand-side sanitation and hygiene intervention design and implementation. These innovations build on approaches employed by Community-Led Total Sanitation and Hygiene (CLTSH) programming to sustain improved WASH behaviours. Through an iterative process, our team conducted formative activities in Amhara, Ethiopia to: 1) generate information regarding stakeholders' experiences with the government's Health Extension Package (HEP) and previous CLTSH programming, and 2) explore options for intervention design and delivery. Our results suggest in some cases, community members were willing to engage in demand-side sanitation and hygiene programming after having negative experiences with ineffectual CLTSH triggering. Health Extension Workers (HEWs) indicated that high demand is placed on them to deliver the 16-component HEP. We conclude that what is needed are demand-side approaches that: 1) engage more community-level change agents, 2) include plans and resources to provide community actors with supportive supervision and on-the-job-training, and 3) focus on behavioural maintenance.

Introduction

In order to meet the World Health Organization's (WHO) targets and maximise health gains in the control and elimination of neglected tropical diseases (NTDs), a multi-sectorial approach that combines all aspects of NTD prevention strategies is needed. Improvements in the use of basic sanitation and proper hygiene practices could lead to measurable and sustained reductions in NTDs and other health outcomes (WHO, 2015), but only if sanitation facilities and proper hygiene behaviours are accessed, adopted, and sustained.

Ethiopia continues to be hyper-endemic for several NTDs, and is ranked amongst the countries with the lowest levels of hygiene and sanitation coverage and utilisation (FMoH, 2006). "Much of the disease burden in the country is preventable, and a considerable proportion is directly related to unsafe water, inadequate sanitation, and poor hygienic practices" (FMoH, 2003). The health risks associated with the current state of hygiene and sanitation in Ethiopia are well recognised by the government and partners, who are working together to reverse the situation. The government's commitment to improving water, sanitation, and hygiene practices is embodied in the national Health Extension Program, and the formulation of a National Hygiene and Sanitation Strategy in 2006 (FMOH, 2006).

The Government of Ethiopia's (GoE) Health Extension Package (HEP), and its accompanying Community-Led Total Sanitation and Hygiene (CLTSH) module, an extension of the traditional Community-Led Total Sanitation (CLTS) approach, represent government-backed and low-cost approaches for improving sanitation and hygiene. GoE is using these programme approaches to tackle health issues in Ethiopia, including, but not limited to WASH-preventive NTDs. However, the implementation of community-level CLTSH intervention activities endorsed by the Ethiopian Federal Ministry of Health (FMoH) falls on Health Extension Workers (HEWs), who already have many responsibilities related to the delivery of the 16-component HEP. While these programming approaches have facilitated progress and success in many regards, important gaps in knowledge related to programme content and effective approaches for intervention delivery exist – in particular, the effectiveness of demand-side interventions and delivery approaches in fostering progressive

and sustained NTD-preventive, WASH-specific behavioural adoption and maintenance in areas where initial triggering has not been successful or sustainable.

Several countries in Africa have adopted CLTS or extensions thereof (e.g. CLTSH) as their approach to addressing open defecation. CLTS and CLTSH approaches have afforded these countries numerous opportunities, but also many challenges. In order to better understand the issues around CLTSH and identify the main challenges and solutions of the Pan-African CLTS Programme, IRC International Water and Sanitation Centre conducted an inventory in 2011. The results of this inventory indicated that, in Ethiopia, triggering events were often sub-optimal due to: 1) Health Extension Worker (HEW) supervisors pressuring HEWs to trigger villages without thoroughly and successfully completing pre-triggering, and 2) poor quality of triggering activities. The inventory also cited post-triggering challenges in Ethiopia related to competing HEW priorities and heavy workloads, which resulted in poor post-triggering follow-up and support as well as a lack of integration and supervision by the health office (Snel and Jacimovic, 2014). Due to these challenges, some triggering and post-triggering events were not perceived well by community members. In addition to these issues, stakeholders have used CLTSH tools for other purposes without properly adapting the materials (e.g. using CLTSH activities such as shit calculations for Community Based Nutrition (CBN)). This made communities less sensitive when CLTSH activities were used for their intended purposes during actual CLTSH triggering events.

Public health programmes such as the HEP often use health benefits as the main motivational message, and focus on achieving ideal health behaviours all at once. Such approaches may overwhelm project participants and discourage them from taking action, or may make the issue challenging to address. In addition, there is a broad evidence base that suggests health considerations do not motivate people to change their behaviours or maintain improved practices (Marteau et al., 2012).

Methodology

During September 2016 – January 2017, the *Andilaye (Amharic for togetherness) project* team conducted formative research in preparation for a cluster-randomized, controlled trial in which the team would design a demand-side sanitation and hygiene intervention and evaluate its effects on the sustainability of WASH-preventive NTD-related behaviours and health. This formative work included a series of qualitative and quantitative research activities, including 16 focus group discussions (FGDs), 32 in-depth key informant interviews (KIIs), 19 household and three community observations in rural Amhara, Ethiopia. These activities sought to generate information regarding experiences with previous CLTSH programming and other issues relevant to the design and delivery of the *Andilaye* intervention. In addition to these methods, we conducted motive analyses (Aunger and Curtis, 2016) to identify and test positive motives for the adoption and maintenance of improved sanitation and hygiene practices that were deemed important to project participants. Our formative research was grounded in several behavioural theories and frameworks, including the *Behaviour Change Wheel* (Michie et al., 2011), the *Theory of Triadic Influence* (Flay and Petraitis, 1994), and the *RANAS* framework (Mosler, 2012).

To guide our formative research inquiries, we developed a framework that enumerated and depicted WASH-related, NTD-preventive practices related to five disease groups of interest for this project (i.e. soil transmitted helminthiasis, schistosomiasis, trachoma, podoconiosis, and other enteric infections). Subsequent to the collection and analysis of our formative research data, we conducted a behavioural targeting exercise, during which we used our data to guide the selection of a parsimonious set of behavioural themes we would design our intervention to address. We pooled evidence from all formative research activities to enumerate the constellation of behaviours and behavioural determinants (i.e. barriers and facilitators) encompassed within the framework, then applied a set of criteria to identify behavioural themes to target. Behavioural targeting criteria included: quantitative and qualitative findings (i.e. ethnogram, KII, and FGD data), feasibility of changing related practices, opportunities to build on existing programming, potential for impact on the five key disease groups of interest, and other empirical and theoretical evidence. Through this exercise, we identified three behavioural themes to target: sanitation, personal hygiene, and household environmental sanitation.

Once we identified behavioural themes to target through our intervention, we used results from our formative research analyses to develop a comprehensive list of barriers and facilitators for each. We then leveraged findings from the formative research to create problem and solution trees for each of our three target behavioural domains (sanitation, personal hygiene, and household environmental sanitation practices).¹ These trees provided a visual representation of the different barriers (problem trees) and solutions (solution trees) to

changing our target behaviours, and were used to help engage and elicit feedback from government stakeholders. Guided by theory, we worked with key government stakeholders to map different types of behavioural determinants against the trees to identify feasible and impactful behaviour change techniques to use in our intervention. Finally, we tested proposed intervention approaches, delivery modalities, and activities through behavioural trials to obtain information from community members regarding their perceptions and preferences related to the proposed intervention.

Results

Results from our formative work indicated that the barriers to improved WASH behaviours were often not due to lack of physical or psychological capability, such as health knowledge. Instead, people often did not carry out improved WASH practices due to physical environment constraints, such as issues with water access, social environment constraints, poor attitudes, and a lack of perceived ability and self-regulation. Our formative research also elucidated how barriers to and facilitators of improved WASH practices are often grounded in social norms, and indicated that perceptions related to self- and collective efficacy are important mediators of uptake of community-based interventions. Motive analyses indicated that aspects such as nurture, comfort, status, attraction, and affiliation were important to community members, which substantiates findings from other locations (Biran et al., 2014). As a result, we wove these motives into the *Andilaye* intervention's design, messaging, and implementation approaches.

Findings from our in-depth interviews regarding previous stakeholder experiences with CLTSH and the HEP indicated that there is high demand placed on HEWs to deliver the 16-component HEP; however, Women's Development Army Leaders (WDALs) are open and able to carry out household counselling visits. Formative research results also suggests that continuous follow-up and supervision by HEWs and other stakeholders is needed to prevent community relapse, especially regarding latrine construction and use. Although 78% (39 of 50) of kebele (sub-district) clusters enrolled in the *Andilaye* Trial have been triggered with CLTSH, and certified as open defecation free (ODF), evidence of open defecation at baseline was observed in or near the compounds of 57% of 1589 *Andilaye* households. This data indicates behavioural slippage subsequent to ODF verification. This is likely the result of CLTSH approaches focusing on catalysing behavioural change, but doing little to guide community members as to how they can sustain improved behaviours when faced with personal setbacks and environmental shocks (e.g. droughts, flooding).

In response to the results of our formative research phase, the *Andilaye* intervention brings improved WASH and NTD-preventive behavioural promotion together by focusing on positive, community-oriented motivators of behavioural change, promoting achievable incremental improvements, and incorporating strategies that facilitate behavioural maintenance. The intervention addresses issues related to over-extension of HEWs and over-saturation of HEP messaging through the engagement of additional community change agents as mechanisms for intervention delivery. In addition to engaging other community change agents, the *Andilaye* intervention leverages the GoE's Women's Development Army (WDA) network. Within the WDA, development teams of 20-30 households with one leader (i.e. 1-to-30 WDALs) are comprised of six networks of five households with one leader (i.e. 1-to-5 WDALs) living in the same neighbourhoods. Six 1-to-5 WDALs reports to the 1-to-30 WDAL, who is supervised by the HEW. By engaging the 1-to-30 WDALs, a broader cross-section of the community is engaging with *Andilaye*'s community and household-level activities.

The *Andilaye* intervention includes various activities, carried out at four levels (*woreda* (district), community, group, and household). Such activities include, but are not limited to household-level counselling visits that focus on achievable, incremental goals set by household members themselves. WDALs tailor these visits to the needs of each household by first conducting a transect walk of the household compound, discussing what is seen with the caregiver, and having the caregiver set monthly goals for the household to work toward. During the household visits, the WDAL employs skills-based counselling that includes behavioural maintenance strategies such as self-regulation, action and barrier planning, and resilience (e.g. improving perceptions related to confidence in continuation, confidence in recovering). These behavioural maintenance components can help curtail behavioural slippage.

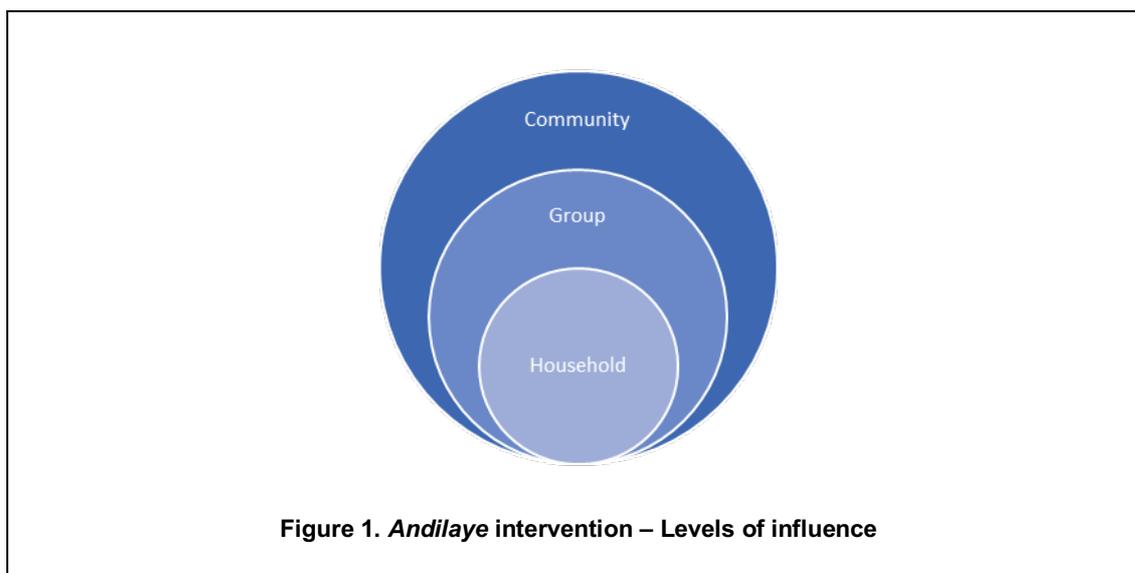


Table 1. <i>Andilaye</i> intervention – behavioural maintenance activities		
Level	Maintenance activity	Aim
District	District-level adaptive management workshops	To leverage monitoring data to facilitate evidence-based, controlled, and documented operational-specific modifications during critical programme moments (i.e., designated “change gates”).
	Skills-based refresher training for supervisors and facilitators	To reinforce previously acquired knowledge and skills and address trainer/facilitator turnover. High HEW turnover was noted as a limitation to CLTSH implementation.
Community	Household graduation & maintenance celebration ceremonies	To hold a celebration to reward households/communities and to motivate one another to sustain well-earned gains. Celebrations foster motivation and also help reinforce improved behaviours and promote healthy competition among communities, which can further facilitate the habituation of improved behaviours promoted by demand-side interventions.
	Cross-fertilization visits	To provide an opportunity to share experiences across communities regarding how to address common issues implementing a demand-side intervention at the community level.
	Skills-based review meetings and refresher trainings for Women Development Army Leaders	To reinforce previously acquired knowledge and skills, address Women Development Army Leader turnover, and review successes and address challenges faced in implementing counselling visits with caregivers.
Group	Community conversations	To generate community-level dialogue regarding nuanced issues associated with maintenance of improved practices and barriers thereof through a follow up round of community group dialog. To carry-out demonstrations related to behavioural maintenance issues.
Household	Barrier planning and behavioural maintenance counselling visits with caregivers	To provide continuous follow-up to households such that the house graduates from counselling related to initial adoption of improved behaviours to counselling related to behavioural maintenance skills. This approach enhances existing CLTSH programming approaches by incorporating household-led goal setting, barrier planning, and behavioural monitoring.

The initial phase of the *Andilaye* intervention focuses on catalysing change such that improved behaviours are readily adopted throughout intervention communities. In order to prevent behavioural slippage, some aspects of behavioural maintenance have been incorporated into the design of behaviour catalysing intervention activities. However, in order to more effectively prevent behavioural slippage, additional behavioural maintenance components are incorporated at later phases, once households and communities have adopted improved practices (see Table 1). The additional behavioural maintenance components of the *Andilaye* intervention are incorporated in the approach because it is important to ensure improved behaviours become habituated, and individuals are equipped with the skills necessary to plan for, identify, and overcome personal setbacks, shocks to the system (e.g., drought, flooding), and other obstacles that may interrupt habituated routines. Given the incorporation of behavioural maintenance intervention components is not typical for community-based health programming, we are currently pursuing additional work to further develop, test, and refine approaches and tools.

The *Andilaye* intervention also furnishes district officials and HEWs with tools to guide supportive supervisory visits and perform on-the-job training with WDALs and HEWs. The 1-to-30 WDAL is the primary counsellor, and visits each household in her catchment area to conduct *Andilaye* household counselling visits about once per month, with each visit lasting around 30 minutes. HEWs have trained 1-to-30 WDALs in intervention villages (*gotts*), and offer supportive supervision and on-the-job-training to each 1-to-30 WDAL in her catchment area as the WDAL conducts her household counselling visits. Each time the HEW moves with each 1-to-30 WDAL (for the round of initial household counselling visits and subsequent monthly visits), she observes a minimum of three household counselling visits with each WDAL. Community Health Centre (CHC) HEWs Supervisors perform supportive supervision and on-the-job training with HEWs, for a minimum of one round for initial household counselling visits and at least once per month for subsequent monthly visits. Woreda Health Offices officials and Emory University staff provide supportive supervision and on-the-job training to the HEWs and CHC HEWs supervisors.

Conclusions and recommendations

Findings from our formative work corroborate documented challenges (Snel and Jacimovic, 2014) related to the implementation of CLTSH in Ethiopia. Together with other existing evidence, our results suggest that previous CLTSH programming will not foster the sustainability of improved sanitation and hygiene practices in the absence of further refinement. Demand-side approaches should engage more broadly with existing community structures, and include continuous follow-up through supportive supervision and on-the-job-training for community change agents. These approaches should incorporate intervention techniques related to behavioural maintenance to help prevent behavioural slippage and close existing programming gaps. Establishing a sense of ownership and efficacy around sanitation at individual, household, and community levels is important for improving behavioral uptake and maintenance, and intervention content needs to target these issues accordingly.

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Notes

See

https://static1.squarespace.com/static/52488773e4b08b502165768c/t/5a843c26652dea0862298fdb/1518615612366/Andilaye_formative+research+trees.pdf for additional details.

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