


Research Paper

Community health clubs improve latrine construction through savings, lending, and income-generating activities

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ABSTRACT

Improved sanitation is critical to both health and the achievement of the Sustainable Development Goals. In this multi-sectoral food security activity, community health clubs (CHC) were implemented by the Zimbabwe Government. Members met regularly to complete a hygiene and sanitation education curriculum. Early on, CHC members faced financial barriers to latrine construction. Members were encouraged to undertake savings, lending, and income-generating activities. 28 percent of CHCs in fact engaged in those activities. This qualitative study aimed to identify motivators of and barriers to latrine construction and to explore whether financial activities supported members in their efforts to overcome barriers. Ten focus group discussions with CHC members and 19 in-depth interviews with key informants were conducted. Data were analyzed using content analysis. Key motivators and enablers included health benefits; the desire to avoid disgust, shame, and embarrassment; access to materials and construction; and social support. Barriers to improvement included costs, water access, limited leadership support, and behavior change resistance. Financial activities helped CHC members overcome the costs of material and construction. Thus, integrating financial activities into CHCs may improve sanitation coverage and we recommend that such add-ons be considered in CHC training programs. To our knowledge, this is the first study in Zimbabwe to explore whether the integration of financial activities into the CHC model is an acceptable and feasible model for improving sanitation coverage.

Key words: community health clubs, food security, hygiene promotion, income-generating activities, sanitation, sustainable development goal 6

HIGHLIGHTS

- This study identified motivators of and barriers to latrine construction and explored the integration of financial activities with CHCs as a model to improve latrine coverage.
- Key motivators and enablers included health benefits, disgust, shame, embarrassment, social norms, and access to materials and builders.
- CHCs integrating financial activities reported that this helped them overcome barriers to latrine construction.

INTRODUCTION

Despite progress made towards Sustainable Development Goal (SDG) No. 6, 494 million people globally still practiced open defecation in 2020 (WHO & UNICEF 2021). In 2019, in Zimbabwe, 37% of the population used basic sanitation facilities (Zimbabwe National Statistics Agency 2019). In response to the sanitation challenges, the Government of Zimbabwe and its partners have promoted safe and innovative sanitation technologies and social marketing strategies (Government of Zimbabwe 2017). From 2014 to 2020, in the Matabeleland North and South provinces, the Amalima program (a United States Agency for International Development (USAID) Bureau for Humanitarian Assistance intervention) used community health clubs (CHCs) to promote sanitation behavior change, particularly among vulnerable households. CHCs are a cost-effective and holistic water, sanitation, and hygiene (WASH) behavior change approach (Waterkeyn & Cairncross 2005; Matimati 2017; Waterkeyn *et al.* 2020; Rosenfeld *et al.* 2021).

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During the initial implementation of CHCs, community members identified financial costs as a barrier to latrine construction. In the Matabeleland North Province, latrines are expensive to construct due to Kalahari sands (Waterkeyn & Waterkeyn 2000). A deep pit cannot be constructed in this sandy soil for fear of collapse. In addition, the pit has to be lined with bricks, which increases effort and costs for households.

Historically, the project encouraged CHC members to integrate village savings and lending (VSL) and income-generating activities (IGA) into their CHCs. Not all CHCs decided to pursue an integrated model. The project supported those who decided to pursue an integrated model (147 of 525 or 28%) with training.

A qualitative assessment was undertaken to identify barriers to, motivators of, and enablers of latrine construction and explore how a CHC model that integrated access to financing and savings might support latrine coverage. Several studies document how CHCs have influenced behavior change in Zimbabwe (Waterkeyn & Cairncross 2005; Waterkeyn *et al.* 2009; Whaley & Webster 2011; Waterkeyn *et al.* 2019). However, to our knowledge, our research is the first to explore latrine construction barriers and enablers when financial activities are combined with CHCs in Zimbabwe.

Description of the program and intervention

From 2013 to 2020, a consortium of organizations implemented the Amalima program. Amalima established over 525 CHCs in the Bulilima, Mangwe, and Gwanda districts in Matabeleland South province and Tsholotsho district in Matabeleland North province (Figure 1). These areas are prone to low rainfall and are food- and nutrition-insecure. Furthermore, hyperinflation and unemployment caused by Zimbabwe's economic crisis further impacted food insecurity. Women are the heads of households, with many men working abroad in South Africa as economic migrant workers. Many of the farmers in the district are subsistence farmers who raise livestock (Chingarande *et al.* 2020).

The intervention

CHCs were first developed in Zimbabwe (Waterkeyn & Cairncross 2005; Waterkeyn 2006) and subsequently adopted in the National Sanitation and Hygiene Policy (Government of Zimbabwe 2017). In the project area, the CHCs varied in size and were comprised of 15–30¹ community members led by a trained village health worker, also known as a community-based facilitator. CHC membership was free, voluntary, and open to all, although self-selected members were primarily female. Over an average of six months, CHC members met on a biweekly or weekly basis to complete a 20-module training. The curriculum included safe handling and storage of water, diarrhea management, menstrual hygiene, malaria, handwashing with soap, and community mobilization. Members adopted practical actions and improvements such as handwashing, constructing latrines and 'tippy tap' handwashing stations, and digging garbage pits. Upon completion, CHC members graduated and received certificates at a village-level ceremony. All CHC members from the 525 CHCs that were formed during the Amalima program (from 2014 onwards) who attended at least 85% of the meetings received certificates.

The project final performance evaluation (IMPEL 2020) reported a significant increase in households safely storing drinking water, from 49.7% at baseline to 98.4% percent at endline ($p < 0.001$). In addition, the endline reported an increase in households using improved sanitation facilities, from 26.1% at baseline to 36.0% at endline ($p < 0.01$). CHCs contributed to these improvements (IMPEL 2020).

Despite improvements in sanitation coverage, the affordability of materials to build high-quality latrines remained a barrier, particularly with hyperinflation in Zimbabwe (Liu 2010). Hyperinflation began in 2007, and Zimbabwe entered a new period of inflation in 2019. Purchases, such as cement, were difficult for poor rural households. Currently, the government has no subsidies on construction material. It costs approximately 129 USD to build a government-recommended Blair ventilated improved pit (VIP) latrine, including materials and labor (program documentation). Builders were not trained by the project, as members relied on builders who lived in their communities.

From 2016, the project encouraged CHC members to diversify into VSL and IGAs to address the financing barrier and encourage continued collaboration between club members. The project trained CHCs that decided to pursue integration with VSL and IGAs on topics such as constitution development, savings, setting up IGAs, and recordkeeping. CHCs did not receive financial or material resources or inputs. Members self-selected to work together based on trust, reliability,

¹ The authors recognise that CHC sizes are variable, and in more densely populated areas, the CHC can consist of up to 75 members. The smaller size of the CHCs in the Amalima project area is in line with the context where the research was conducted, as in Matabeleland province, the households are spatially populated, and the average size of CHC membership in the area varied from 15 to 30 members.

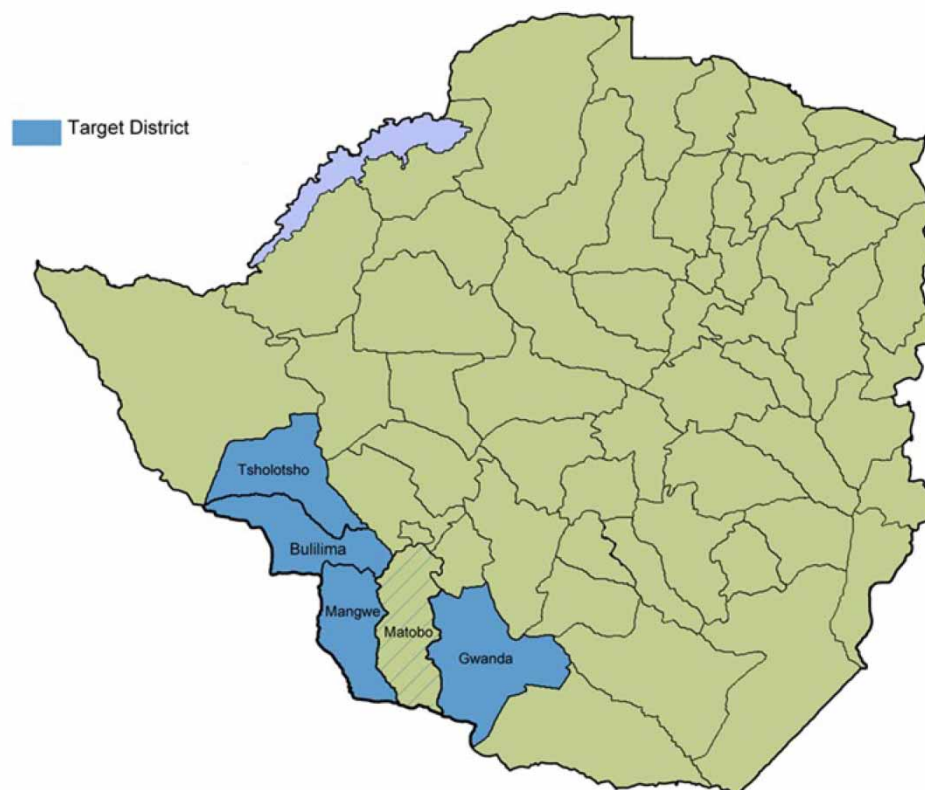


Figure 1 | Map of Amalima Target Districts (in blue). Please refer to the online version of this paper to see this figure in colour: <http://dx.doi.org/10.2166/washdev.2022.084>.

and mutual understanding. IGAs generated resources through small livestock, horticulture, and baking. In the final year (2020) of the project, out of the original 525, a total of 147 or 28% of CHCs had diversified into VSL and IGAs.

Annual monitoring data indicated that CHCs that integrated VSL and IGAs had a higher level of latrine construction (among participants) than those that did not. Out of a sample of 158 households with no latrines at project inception (2013) and who took part in the integrated model that included access to VSL and IGAs, 59% constructed latrines by 2020. Of the 160 sampled households with no latrines at project inception and who did not take part in an integrated CHC model, only 32% had since constructed latrines. These findings suggested that access to additional financing through VSL/IGAs may enable households who desire an improved latrine to overcome financial barriers. To further explore these initial results, Amalima used a qualitative approach to understand differences between CHCs with and without VSL/IGAs.

For this article, the profiles are referred to as 'CHCs+' for CHCs that have integrated VSL and IGAs and 'standard CHCs' for those that have not integrated VSL and IGAs.

The specific research questions for the study were:

- What are the motivators, enablers, and barriers for standard CHC and CHC+ members to construct latrines?
- Is the integration of financial activities into the CHCs an acceptable and feasible model for improving sanitation coverage?

METHODS

The study employed qualitative research methods. A team of six researchers from the Amalima staff conducted 10 Focus Group Discussions (FGDs) and 19 in-depth interviews (IDIs). Tables 1 and 2 show the characteristics of the FGDs and IDIs. Ninety-six percent of the participants were female. Researchers held FGDs with members from 5 CHCs+ and 5 standard CHCs. Each FGD consisted of participants from the same CHC residing in the same village. In total, from the CHC+ members, 63 females and 1 male took part in the FGDs, and from the CHC members, 62 females and 6 males took part in the FGDs. Eighteen

Table 1 | Sampled CHC and CHC+

Mangwe district	FDG 1: CHC+	FDG 2: CHC+	FDG 3: Standard CHC	FDG 4: Standard CHC	FDG 5: Standard CHC
Formation	2016	2015	2014	2016	2014
Club Composition	15 females (F) Age range (AR): 22–66	23 F AR: 30–77	28 F AR: 37–78	22 F & 2 males (M). AR: 24–88.	23 F 2 M AR: 26–70
Proximity to the markets	5–10KM	0–5 KM	5–10 KM	5–10 KM	0–5 KM
Group Livelihood activity	VSL/Livestock/horticulture	VSL/Livestock	None	None	None
Composition/Membership profile of the CHC members participating in the FGD	12 F AR: 22–66	10 F AR: 33–68	12 F AR: 37–61	10 F; 2 M AR: 28–69	13 F, 1 M AR: 26–59
Tsholotsho District	FDG 6: CHC+	FDG 7: CHC+	FDG 8: CHC+	FDG 9: Standard CHC	FDG 10: Standard CHC
Formation	2017	2016	2014	2016	2015
Composition/Membership profile	20 F AR: 35–66	22 F AR: 25–72	2 M & 35 F AR: 19–72	3 M & 30 F AR: 23–68	1 M & 28 F AR: 21–79
Proximity to the markets	5–10 KM	5–10 KM	40 KM	40 KM	5–10 KM
Livelihood activity of group	VSL	VSL	VSL/ horticulture	Some practice conservation Agriculture	None
Composition/Membership profile of the CHC members participating in the FGD	14 F AR: 35–52	12 F AR: 25–72	15 F & 1 M AR: 22–49	16 F & 2 M AR: 26–57	11 F & 1 M AR: 21–56

Table 2 | Sampled IDIs and spot checks

			Participants				Total number of participants	Participant profile information
	Mangwe district	Tsholotsho district	Community-based facilitators	EHTs	Agritex Officers	CHC members		
IDIs	8	11	9	4	2	4	19	18 F & 1 M AR: 27–69
Observations	1	3	–	–	–	4	4	4 F CHC+ members. AR: 33–51. All had constructed latrines from VSL proceeds. All had constructed latrines from VSL proceeds, and all 4 had hygiene enabling facilities in place (latrine, tippy tap with soap and water, pot rack, refuse pit, cleanliness of the homestead)

females and one male participated in the IDIs, and the respondents consisted of 9 community-based facilitators, 4 environmental health technicians, 2 agriculture extension officers (referred to as Agritex officers), and 4 CHC members.

The researchers used convenience sampling to select four CHC+ member households for observations. These CHC+ members also participated in the FGDs. The researchers conducted household-level observations using a simple checklist to check for the following hygiene-enabling facilities: latrine, tippy tap with soap and water, pot rack, refuse pit, and cleanliness of the home. Both FGDs and IDIs were used to triangulate and validate the data gathered.

Study area and sampling strategy

The study was conducted in the Tsholotsho district in Matabeleland North Province and the Mangwe district in Matabeleland South province. Tsholotsho district was selected by default, as it is the only project implementation district in Matabeleland North province, while Mangwe was randomly selected from the three districts included in the project in the Matabeleland South Province. Purposive sampling was used to select participants. Participating villages were purposively selected based on the following criteria to capture the wide range of variables:

- Duration: Length of time that the CHC has been active (from when the CHC was established and not just the duration of the VSL/IGA projects)
- Demographics: CHCs with mostly women, mixed-gender CHCs, and CHCs with youth
- Livelihoods Diversity: CHCs with different livelihood activities (livestock, horticulture, etc.)
- Distance to Markets: CHCs farther from and closer to markets

Data collection and management

Project staff developed the semi-structured IDI and FGD guides and an observation checklist with input from WASH and qualitative research advisors and the project's technical learning unit. Enumerators attended a 2-day training on the methods and tools. The researchers pretested the guides with a CHC in the Tsholotsho district and collected data over 5 days in November 2019. Enumerators recorded FGDs and IDIs in Ndebele. Four researchers who are fluent Ndebele speakers transcribed the interviews into English. IDIs lasted between 20 and 30 minutes, and FGDs between 60 and 90 minutes. Spot checks of household latrines and hygiene were held in a sample of four CHC+ households.

Data analysis

The transcribed text was entered in Excel. Four researchers reviewed the data to determine codes and organize the data into conceptual themes. These four researchers employed content and thematic analysis (Hsieh & Shannon 2005) and constant comparison and triangulation to ensure that all codes and themes were grounded in the data. Results from the FGDs were triangulated with IDIs and spot checks of a subset of CHC+ latrines. Additionally, during the coding and analysis process, the researchers engaged in analytical dialogue, which enhanced the study's rigor and minimized individual researcher bias.

Research ethics

Prior to data collection, the Amalima program technical learning unit team and WASH and qualitative research experts reviewed the protocol and the data collection tools. All participants gave verbal informed consent. The electronic data were de-identified. Hard copies of the notes and the voice recorder were kept in a locked cabinet.

RESULTS

Table 3 provides a summary of the themes from this study.

What motivated and enabled CHC to construct latrines?

Across both standard CHCs and CHCs+, motivating factors for latrine construction included livestock and human health, social norms, disgust, shame, and embarrassment. Access to materials, builders, and social support facilitated construction for both groups. The only key difference identified between the two groups was that CHCs+ had 'access to money' from VSL and/or from IGAs, which in turn, facilitated latrine construction.

Livestock and human health benefits

While fewer standard CHC members had constructed latrines, they, along with CHC+ members, environmental health technicians (EHTs), and Agritex officers, highlighted having gained health knowledge from the CHC modules. Both standard CHC and CHC+ members indicated being motivated to build latrines to reduce diseases such as cholera and diarrhea. Across the Mangwe and Tsholotsho districts, standard CHC and CHC+ members stated that they were motivated to construct latrines to stop poultry from eating human feces, which was important as the CHC members eat the chicken intestines as a relish. This perceived health concern motivated sanitation practices. In addition, they were motivated to reduce measles in cows, which is caused by eating human feces and will result in being condemned at the abattoir.

Table 3 | Summary of themes and quotes

Domain	Theme	Quote
Motivating factors for CHC members to construct latrines	Knowledge from the CHC modules and Animal and Human Health Benefits	<i>Because of the CHCs, people in my village now have latrines and they are now a fewer cases of diarrhea in the area.</i> – young female CHC member, Mangwe
	Desire to avoid fear, shame and embarrassment	<i>My child, it's embarrassing to be seen carrying a hoe, everyone will know what you are up to.</i> – elderly standard CHC member from Mangwe
	Social and Leadership Support	<i>We heard that some people steal fecal matter for rituals for enrichment purposes therefore we were motivated to construct latrines.</i> – CHC+ member, Tsholotsho district
	Access to materials and builders	<i>They can make their own bricks to build the latrines because they can easily get river sand. Also, in some areas they get easily get water to help them build the latrines.</i> – EHT A
	Access to VSL/IGAs for CHC+ members	<i>They make their own bricks using locally available material (river sand). Raise money through VS&L to buy cement.</i> – AGRITEX officer
Barriers to latrine Construction	Lack of money to procure cement	<i>The Zimbabwe economic situation is hindering us from constructing latrines, thus, we spend most of the money on food not Latrines because of the drought.</i> – standard CHC member from Tsholotsho
	Lack of water for brick making	<i>Some members miss meetings because they spend most of the time waiting in long {water} queues. We face water shortages for domestic use and for our livestock.</i> – standard CHC member
	'Lack of local leadership'	<i>If the village head does not prioritize the construction of a latrine in the area, very few people will bother constructing a latrine.</i> – EHT – Tsholotsho district
	Behavior change	<i>Behavior change is a process at they have not reached that stage where they see the importance of building latrines. Some are just resistant and some could be just laggards.</i> – EHT – Mangwe district
Impact of VSL/IGA to CHCs	Financial benefits	<i>It helped those who did not have latrines. You can use the money to buy cement and construct the latrine. Some members used money from VSL and others already had the latrines. To a greater extent, we used the money to buy cement and pay the builders.</i> – CHC+ member, Tsholotsho district
	Social cohesion and social capital (social community safety net)	<i>They work together very well and they understand each other more. They can take their children to school and can buy livestock (chickens, goats, donkeys and cows).</i> – Agritex Officer, Mangwe district

Communities place great value on owning livestock as a form of wealth, and therefore, the desire to protect their livestock resulted in latrine construction.

Desire to avoid disgust, shame, and embarrassment

Shame, embarrassment, disgust, and the desire to have one's own latrine also encouraged construction according to FGDs with standard CHC and CHC+ members and IDIs with community-based facilitators. In Mangwe and Tsholotsho, both standard CHC and CHC+ members stated that it was not easy to share a latrine with their neighbors, as frequently, 'derogatory' signage would be by the latrine, such as 'do not miss the toilet.' The users felt targeted by such messages. In Tsholotsho, both standard CHC and CHC+ members were discouraged from openly defecating for fear of being seen due to the lack of tree cover from deforestation, along with homesteads' proximity to each other.

Social and leadership support

IDIs with EHTs and Agritex officers highlighted that CHC competitions and the goal to be selected as a model home motivated CHC members. Hygiene and sanitation-related songs at CHC meetings and community gatherings served as reminders and increased social pressure. IDIs indicated that community leaders encouraged and, at times, enforced latrine construction, especially for new homesteads. New homesteads were encouraged to prioritize building a latrine before other structures. Home visits from EHTs and other extension workers put ‘social pressure’ on CHC members to construct latrines. In Tsholotsho, beliefs that feces are used in witchcraft also encouraged construction.

Some CHC+ members stated that having their husbands’ support and labor made it easier. To increase male engagement, community-based facilitators, EHTs, and community leadership recommended reducing the frequency of lessons during the farming season, increasing awareness of the benefits of IGAs to the family’s livelihoods, and incorporating ball games into the hygiene activities.

Both standard CHC and CHC+ groups highlighted that ‘helping each other’ in activities such as brick molding-supported latrine construction. This was echoed by an EHT that reported that club members helped each other to collect raw materials including sand and water from the Gwayi River and used the funds from the VSL to purchase cement. This ‘spirit of supporting each other’ was echoed more strongly among CHC+ members than among members of standard CHCs. Group members had access to income and pooling funds on a monthly basis, and celebrating each member’s success with a latrine, primarily because of the VSL, was important.

Access to materials and builders

Cement availability at local markets, access to markets, local availability of skilled builders, and easy access to resources such as river sand and a soil type that can be molded into bricks facilitated latrine construction. In Mangwe, CHCs highlighted that proximity to Botswana, where cement is much cheaper, was an enabler.

Access to VSL/IGAs for CHC+ members

The key difference between CHCs+ and standard CHCs was that access to finance from VSL/IGA supported latrine construction. Whereas standard CHC members mostly used remittances from family members and sometimes donations (from other NGOs), which are not consistently available, to build latrines, CHC+ members had greater and more reliable access to cement because of the VSL component. CHC+ members reported that social cohesion resulted in supporting each other in building a latrine and facilitated collaboration on the VSL/IGA. Some CHCs+ pooled funds and followed a month-by-month rotational system where selected members received money from the pooled fund to build a latrine. When those who had latrines received money, they used the funds towards IGAs. This was emphasized by a CHC member who stated that *‘we worked together as a group. Because of the VSL activity, we bought cement using the money we raised from our VSL and constructed latrines for those members in our group without latrines.’* The role of the VSL and IGAs in providing financial capital for CHC+ members was echoed by an Agritex officer who stated that *‘the VSL and IGAs can make it easier for people to buy cement, helping them construct their latrines.’* Interestingly, a ripple effect was the formation of new CHCs+ that saw these benefits.

What barriers to latrine construction do standard CHCs and CHCs+ face?

The main barriers identified included the lack of cement or cash to purchase cement and/or pay builders, lack of water (for brick-making), lack of local leadership support, and resistance to behavior change.

Lack of cash to purchase cement or Pay builders

The economic crisis and drought limited households’ financial capital. Standard CHC members reported that cement prices had increased. The lack of cash to purchase cement and/or pay builders was highlighted strongly as the key limiting factor. Most households had to prioritize spending money on food over latrines because of the drought and the economic situation. One of the standard CHC members pointed out that *‘those in VSL are always ahead, and cash is not a problem for them.’* This underlined the value of the VSL/IGA perceived by standard CHC members.

Most CHC+ members who had constructed latrines indicated that the cost and the distance to where cement can be purchased were the main challenges that they had faced before participating in the VSL/IGA. Some overcame this barrier by paying in installments, *‘buying building material bit by bit until it was enough.’* IDIs with CHC members, community-based facilitators, EHTs, and Agritex officers also reported financing as a barrier and that this affected more elderly club members in standard CHCs. An EHT also highlighted that because of the economic downturn, it was difficult for food-insecure families to purchase cement, and shared latrines may be a low-cost option.

Access to water

Both CHC+ and standard CHC members highlighted that the lack of water in both drought-prone districts meant that making bricks for latrines and the time spent collecting water were challenges.

Lack of support from local leadership

In most IDIs with community-based facilitators, it was reported that leaders encouraged community members to construct latrines. Some leaders put in place community by-laws promoting latrine construction. However, most community-based facilitators, EHT, and Agritex officers agreed that there was a '*lack of local leadership support*' enforcing the building of latrines. One community-based facilitator stated that ensuring engagement with local leaders had resulted in them supporting CHCs by attending graduations and promoting latrine construction.

Resistance to behavior change

EHTs and some community-based facilitators reported that not all members view building a latrine as important. A community-based facilitator mentioned that some were late adopters of the hygiene practices promoted by CHCs, and another mentioned that it was common for people to say that they had lived a long time without a latrine and did not see the value.

Perceptions of integrating VSL/IGA into CHCs

Most CHC+ members indicated that VSL/IGAs had helped them to procure cement or pay laborers and to expand their livelihood activities. As stated by one CHC+ member:

'To a greater extent, VSL helped, as I used the money to buy some of the stuff I needed to construct a latrine. And we do other small businesses such as those of vegetables, poultry, jiggies (savory snacks), airtime (mobile phone airtime), soups, and even bake scones.'

Most CHC+ members participated in the VSL primarily to construct a latrine. A CHC+ member from Tsholotsho stated that money helped those without latrines to purchase cement and to pay builders. The EHTs corroborated the primary use of VSL and IGA proceeds being used for latrine construction by stating that '*Those in VSL can buy themselves cement to build their latrines and can also buy livestock and some {buy} kitchen equipment*' (EHT 2). In addition, an Agritex officer stated that '*The VSL component is one of the most important driving factors that make them meet, it helps them share ideas, and with the little they make in those groups, they can buy some of the necessities at home.*'

All FGD participants and IDIs with EHTs, CBFs, and Agritex officers indicated that VSL/IGA training should be a mandatory component of the CHC curriculum to overcome financial barriers to latrine construction, as '*it [VSL/IGA] has helped us achieve our goals; we now have livestock and have managed to construct latrines in our homesteads*' (CHC+ member).

The Agritex officer indicated that

'It should be mandatory so that when they graduate, they will not only be knowing hygiene, and they would also have all the hygiene-enabling facilities because some require money, for example, the latrines. So, the IGAs will be the source of finance so that they can buy the cement to build them.'

EHTs suggested training members on VSL/IGAs after they had completed all the sanitation and hygiene modules to motivate the CHCs+ to use proceeds from their VSL/IGA for latrine construction and hygiene activities. Spot checks conducted at a sample of CHC+ member households demonstrated that latrines had been constructed, and the hygiene conditions, including tippy taps, refuse pits, pot racks, and well-swept yards, adhered to the standards promoted by the CHCs.

DISCUSSION

It is well documented that CHCs can build social cohesion and unity (Waterkeyn & Cairncross 2005; Beesley & Feeny 2016; Rosenfeld 2019; Rosenfeld *et al.* 2021). In this study, the CHC members that went on to form a VSL demonstrated a higher level of social cohesion. Members self-selected to work together based on trust, reliability, and mutual understanding. In some cases, multiple VSL groups resulted from one CHC, as members formed smaller groups with members they trusted because of

the risks associated with pooling money. In this study, CHC+ participants had this kind of ongoing engagement with each other through the IGA/VSL activities, further strengthening their social capital.

The financial capital from IGA/VSL activities supported latrine construction. It is also important to note that CHC+ members were motivated to use VSL/IGA funds to build latrines, which may have been the result of the CHC modules. This helped CHC+ members overcome financial barriers to latrine construction, which was the main difference between the barriers reported by CHC members and CHC+ members.

The lack of money to procure cement and pay for builders has been documented in other studies on sanitation (Sara & Graham 2014; Brooks *et al.* 2015; Bongartz *et al.* 2016). Integration of the CHC+ approach into national hygiene and sanitation strategies may overcome this barrier, thus in turn strengthening the effectiveness of CHCs to increase sanitation coverage.

CHCs+ established as far back as 2014 still actively meet to undertake VSL activities, contributing to sustainability. Annual monitoring data indicate that 80 percent of CHC+ members still met at least 2 years after graduation. However, hygiene promotion did not always remain core to the group's activities once they graduated and embarked on VSL/IGAs. Sustaining a focus on hygiene may require additional follow-up, such as regular refresher visits by community-based facilitators or EHTs.

Limitations

Program staff collected the data, which may have produced some social desirability bias in participants' responses. Substantial efforts were made to conduct the study with integrity and to maintain fidelity to the research and analytic processes described. Biases were minimized by developing standard semi-structured FGD and IDI guides, systematically transcribing and coding data, and using external reviewers. CHC members were not randomly selected, and the findings are not representative of all CHC members in the project area. The study was not designed to identify the relative importance of these themes in terms of motivators, enablers, and barriers.

RECOMMENDATIONS AND CONCLUSIONS

The cost of latrine construction is the main constraint faced by CHC members who wish to comply with the recommended standards of a Blair VIP latrine, but who face barriers due to poverty, inflation, and limited income. Therefore, the integration of VSL/IGAs into CHCs (which in this study are predominated by women) can address this barrier. Integrating financial activities into CHCs can amplify and enhance the social support created by the clubs to improve sanitation coverage. Supporting the Government of Zimbabwe and other stakeholders in integrating financial activities into CHCs and continuing regular follow-up and refreshers are important to achieve progress towards SDG 6. During scale-up, mixed-methods research can assess this approach's effectiveness in additional districts and at scale.

AUTHOR COMMENTS

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DATA AVAILABILITY STATEMENT

All relevant data are included in the paper or its Supplementary Information.

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