



Effectiveness of Community Health Clubs Intervention on Selected Hygiene and Health Outcomes in Kajiado County, Kenya: A Quasi-Experimental Study of a Pastoral Community

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Abstract

INTRODUCTION

Maintaining optimal hygiene and health is a fundamental human right that cannot be compromised. The United Nations General Assembly has acknowledged the significance of achieving "health and well-being" and providing "safe water and sanitation for all" by 2030. However, diseases associated with water, sanitation and hygiene remain a significant concern worldwide, with diarrheal diseases being a leading cause of morbidity and mortality among children under five. This study evaluated the effectiveness of community health clubs on selected hygiene and health outcomes in children under five years old.

METHODOLOGY

A quasi-experimental design was conducted among households in the intervention group where community health clubs (CHCs) and community-led total sanitation (CLTS) were utilized and in the control group where only community-led total sanitation was utilized. Researchers conducted a baseline survey, facilitated discussions on open defecation, and created action plans. Community health clubs were formed for health education, with two community health extension workers and two community Health Assistants providing training on hygiene and latrine ownership. This study recruited a representative sample of 514 households, 256 in the intervention group, and 258 in the control group. Trained interviewers conducted interviews at baseline and after six months with household heads. Twenty focus group discussions were conducted, and 162 water samples were collected for bacteriological analysis to determine the presence and quantity of microbes.

RESULTS

The study revealed diarrheal cases reduction at the end of the study in the intervention group from 50.8% to 37.4%. A significant decrease in risk of 32.1% in female-headed households was also observed. Additionally, families headed by a person who had attained tertiary education showed a 100% decrease in risk from both study arms.

CONCLUSION

Incorporating health strategies such as community health clubs into sanitation programs leads to improved water safety and hygiene. Our findings indicate that the combined approach of community health clubs and community-led total sanitation significantly reduced the incidence of diarrhoea among children under five years old and positively influenced other selected hygiene and health outcomes.

Keywords: Diarrhea, Community Health Clubs, Impact Evaluations, Kajiado

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Introduction

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of achieving "health and well-being" and providing "safe water and sanitation for all" by 2030. However, diseases associated with water, sanitation and hygiene remain a significant concern worldwide, with diarrheal diseases

being a leading cause of morbidity and mortality among children under five. The World Health Organization reports that these diseases account for over 500,000 deaths annually in this age group, primarily in sub-Saharan Africa, underscoring the urgent need for targeted interventions ¹.

While about 88% of the global population has access to safely managed drinking water, there are regional disparities. In sub-Saharan Africa, access drops to approximately 60%, with many people relying on unsafe sources like surface water. In Kenya, roughly 58% of the population has access, with significant differences between urban and rural areas. Kajiado County faces limited access to safe drinking water where only 50%-60% of households have reliable water sources, often depending on boreholes and unsafe seasonal rivers. Open defecation is another issue impacting health and sanitation. Globally, 673 million people practice open defecation, contributing to increased rates of diarrheal diseases, and other health problems. Sub-sahara Africa has an open defecation prevalence of about 28%, while Kenya reports approximately 24%, with rural areas experiencing higher rates. In Kajiado County, estimates indicate that 30-40% of the population, particularly in pastoral communities engage in open defecation ²⁻⁴. This is because the Ministry of Health is implementing community-led total sanitation to achieve open defecation-free status, safe household water use, and good hygiene practices.

However, there are initiatives such as community health clubs that can be utilized to reverse the situation. These are initiatives driven by community members that promote water, sanitation and hygiene. They focus on collective learning and empowerment leading to addressing public health issues. Research indicates that community health clubs significantly enhance hygiene behaviours, which are vital for reducing morbidity associated with diarrheal diseases. A study conducted in Zimbabwe showed that community health clubs in rural areas improved

hygiene practices and led to decreased prevalence of diarrheal diseases among children⁵, the study demonstrated the effectiveness of community health clubs in fostering behaviour change through education and community engagement, resulting in improved health outcomes.

Additionally, community health clubs impart practical skills related to sanitation and hygiene, such as handwashing with soap and safe waste disposal, which are essential for preventing disease transmission. For instance, a study in Uganda found that participation in community health clubs was linked to a significant reduction in gastrointestinal infections among young children⁶. This evidence highlights how community-led interventions can effectively address the substantial disease burden linked to unsafe water use, inadequate sanitation, and poor hygiene practices.

Despite the successes of community health clubs in improving health outcomes, including reductions in diarrheal cases, challenges persist, such as resource limitations and the need for sustained community engagement. Continuous support is essential to ensure that community health clubs can maintain their efforts and adapt to the evolving health needs of their communities ⁷. This study aimed to evaluate the effectiveness of community health clubs on selected hygiene and health outcomes among children under five years old.

Methodology

Study design and setting

A quasi-experimental (Pre-test- post-test non-equivalent control group) study design was conducted. Randomization of participants was not possible, hence, the resulting groups were non-equivalent ^{8,9}. CHCs were formed by two community health extension workers and two community health assistants. Using household registers provided by village elders, households were recruited into an intervention group (CHC+CLTS) and a comparison group

(CLTS), and both groups were interviewed pre and post-intervention.

Study site

The study was implemented in Kajiado County. It borders the Republic of Tanzania to the Southwest, Taita Taveta County to the Southeast, Nairobi City to the Northeast, Kiambu County to the North, and Narok County to the West. Rombo and Namelok sub-locations where the study areas are separated by the Kuku sub-location. They have a household population of 2113 and 1578 respectively.

Study population

The study involved 514 households, with 256 in the intervention group and 258 in the control group, all having at least one child under five. Non-randomization posed a risk of selection bias, prompting the use of propensity score matching to align intervention households with control households based on similar baseline characteristics⁹. Logistic regression calculated propensity scores using factors such as age, gender, marital status, education, income, and the presence of young children¹⁰. The Nearest Neighbour Method with caliper adjustment ensured appropriate matching. Balance was confirmed with Absolute Standardized Mean Differences and Variance Ratios, aiming for a standard mean difference below 0.1 and a variance ratio near 1¹¹⁻¹³.

Sample size and sampling

To ensure accurate results, the sample size was estimated using a formula for comparing two binomial distributions¹⁴.

$$n = \frac{\{Z\alpha/2 \times \sqrt{2p(1-p)} + Z\beta \times \sqrt{p_1(1-p_1) + p_2(1-p_2)}\}^2}{(p_1 - p_2)^2}$$

Where:

n = is the required sample size in each of the two groups

$$p = (p_1 + p_2)/2$$

p₁ = is the proportion of households that have adopted safe water, sanitation and hygiene practices in the control group

p₂ = is the proportion of households that have adopted safe water, sanitation and hygiene practices in the intervention group.

(1-p₁) = q₁ = is the proportion of households that have not adopted safe water, sanitation and hygiene practices in the control group.

(1-p₂) = q₂ = is the proportion of households that have not adopted safe water, sanitation and hygiene practices in the intervention group.

X = (p₁ - p₂)² minimum detectable difference size at six months.

Z_α = is the standard normal deviate for α = 1.96

β = is the standard normal deviate for β = 1.28 (90% power).

The desired sample size was:

$$= \frac{\{1.96 \times \sqrt{2 \times 0.6 \times 0.4} + 1.28 \times \sqrt{0.5 \times 0.5 + 0.7 \times 0.3}\}^2}{(0.5 - 0.7)^2}$$

= Sample size for each group = 122

= Adjusting for attrition(10%) = 269

= Final sample size for both arms, at baseline and endline = 538

Participants were divided into two groups: the intervention group in Namelok which had 256 heads of households interviewed whereas Rombo the control group had 258 interviewed. Random water samples were collected from selected households in the two sub-locations, totalling 162 samples for analysis at the Food Safety and Nutrition Reference Laboratory. Two community health assistants and ten community health promoters conducted weekly interviews with caregivers about diarrheal diseases in children under five. Data collection used standard MOH 515 tools, the incidence rate ratio was calculated for the two groups and the comparisons were done.

Study procedure

The integration of community health clubs and community-led total sanitation aimed to empower communities through collective action in sanitation and health. In the control group, the study started with a baseline assessment of sanitation and hygiene status, and identifying key stakeholders in the community. We organized events to discuss sanitation practices, featuring demonstrations on the necessity for change and conversations about the health effects of poor sanitation, particularly the consequences of open defecation. Community members were assisted in creating

action plans with specific steps and timelines aimed at achieving open defecation-free status. We also provided technical support for building latrines and promoting hygiene practices like handwashing. A community health extension worker and community health assistant monitored progress and conducted follow-up visits to assess both latrine construction and hygiene practices.

For the intervention group, we adopted community-led total sanitation combined with the establishment of five community health clubs. Initially, we identified the community's water, sanitation, and hygiene needs and set specific goals to improve health standards. Community meetings facilitated the formation of clubs and a leadership team, assigning roles to members. To support these clubs, we created a comprehensive plan that included training sessions and health promotion activities. Collaborating with local health professionals ensured diverse representation in the clubs, with a leadership committee elected to organize activities. Numerous training sessions were held at a local health facility, led by a community health extension worker and a community health assistant. Topics included environmental hygiene and proper handwashing techniques, underscoring the importance of latrine ownership and constructing improvised handwashing stations. Each group participated in nine training sessions on WASH topics, lasting between 20 to 40 minutes each.

Data collection

To assess the Community Health Clubs, data was collected using structured questionnaires, observation checklists, and focus group discussion guides at both the baseline and end-line. Quantitative data revealed handwashing frequency, methods, and the availability of soap and water. Physical checks confirmed the presence of soap and water at handwashing stations. Latrine conditions were classified as "improved" or "unimproved" based on World Health Organization criteria. Improved options

included flush toilets and ventilated improved pits, while unimproved options were open pits or bucket toilets. Physical inspections verified the type and condition of latrines. Data regarding diarrhoea prevalence among children under five were collected through caregiver interviews, providing context for health challenges. Post-campaign, diarrhoea cases were monitored to assess changes. Qualitative data was collected through structured FGDs, coded for analysis, allowing participants to share their perceptions and barriers to safe water, sanitation, and hygiene practices. To determine the effectiveness of the intervention, pre- and post-intervention surveys assessed bacteriological water quality, sanitation levels, hygiene practices, and health outcomes by tracking caregiver-reported diarrhoea cases in children under five. A pre-test with 30 randomly selected households from Kuku confirmed tool reliability, yielding a Cronbach's Alpha mean score of 0.74, indicating acceptable internal consistency. These households were excluded from the analysis.

Data analysis

Quantitative data was analyzed using StataCorp.2017 software¹⁸. Categorical variables were presented as percentages and compared using Pearson's Chi-square test. Logistic regression analysis was used to determine the predictors of diarrhoea. A difference-in-difference analysis was used to determine the prevalence of diarrhoea in children under five. NVivo Pro Version 11 software tool was used for qualitative data analysis. Analysis of heads of households' perception towards safe water, sanitation, and hygiene practices utilized thematic coding of FGDs, identifying key themes and barriers. These were then integrated with quantitative findings offering a comprehensive view of the factors influencing water, sanitation and hygiene factors in the community.

Ethical considerations

Ethical clearance was sought from the Scientific and Ethics Review Unit and was

obtained through protocol number KEMRI/SERU/CPHR/003/3934. Signed informed consent was obtained from all willing participants.

Results

Socio-demographic and economic characteristics of households

The study included 514 respondents- 256 in the intervention group and 258 in the control group. Females were the majority in both groups, at 78.79% and 21.21% males, respectively. The majority of respondents were married (91.4%), with (2.33%) widowed. Most respondents had no formal education (48.64 %) or had completed primary education (39.69%). The majority were under 30 years old (49.42%), with 4.86% over 56 years old. The majority (44.16 %) had a monthly household expenditure between Ksh. 3501-6500, and 5.26% spent over Ksh. 12500. There was no significant difference between the two groups, apart from the marital status, as shown in [Table 1].

Out of all the participants, 230(44.74%) had access to improved water

sources. However, the intervention group showed a significantly higher proportion of safe water usage (diff=23.86, $p=0.05$). The presence of open defecation sites was significantly lower in the intervention at the endline (diff=32.9, $p=0.001$) [Table 2].

Prevalence of diarrheal cases in children under five years old

At the study's start, self-reported diarrhoea cases in the intervention area were 50.8%, decreasing to 37.4% by the end (difference of 13.4%, $p = 0.072$), while the control group saw only a 0.6% decrease. Notably, households headed by individuals with tertiary education experienced a drop from 33.3% to 0%. [Table 3].

Household bacteriological water quality

At the start of the study, the average total coliform count in the intervention group was 494 MPN/100mL, and *E. coli* was found at 2MPN/100mL. In contrast, the control group had a total coliform count of 423MPN/100mL and *E. coli* at 0MPN/100mL.

Table 1:
Socio-demographic characteristics of the study participants

Variable		Overall (N=514) (n%)	Intervention (N=256)(n%)	Control (N=258)(n%)	p= value
Gender	Female	405(78.79)	200 (78.13)	205(79.46)	0.712
	Male	109(21.21)	56 (21.88)	53 (20.54)	
Marital status	Single	23(4.47)	6(2.34)	17 (6.59)	0.029
	Married	466(90.66)	234(91.41)	232(89.92)	
	Divorced	13(2.53)	10(3.91)	3(1.16)	
	Widowed	12(2.33)	6(2.34)	6(2.33)	
Education level	None	250(48.64)	131(51.17)	119(46.12)	0.411
	Primary	204(39.69)	97(37.89)	107(41.47)	
	Secondary	49(9.53)	21(8.20)	28(10.85)	
	Tertiary	11(2.14)	7(2.73)	4(1.55)	
Age	<30 years	254 (49.42)	118(46.09)	136(52.71)	0.295
	31-43 years	165(32.10)	83(32.42)	82(31.78)	
	44-56 years	70(13.62)	40(15.63)	30(11.63)	
	>56 years	25(4.86)	15(5.86)	10(3.88)	
Household Monthly Expenditure (Ksh.)	500-3500	139(27.04)	63(24.61)	76(29.46)	0.560
	3501-6500	227(44.16)	117(45.70)	110(42.64)	
	6501-9500	65(12.65)	30(11.72)	35(13.57)	
	9501-12500	56(10.89)	32(12.50)	24(9.30)	
	>12500	27(5.26)	14(5.47)	13(5.04)	



By the end of the study, the intervention group reported an average total coliform count of 195 MPN/100mL, with *E. coli* remaining at 0 MPN/100mL.

Meanwhile, the control group showed an average coliform count of 366 MPN/100mL

and maintained *E. coli* at 0 MPN/100mL [Table 4].

To deepen our understanding of the quantitative findings, we conducted focus group discussions with household heads, revealing important insights.

Table 2:
Comparison of the two Study Groups at Baseline and Endline

	Baseline			Endline				
Variable	Namelok	Rombo	%Baseline Difference	Namelok	Rombo	%Endline Difference	%DID	p-value
Main water source								
Borehole	65(47.79)	6(48.06)	-0.27	45(37.50)	5(44.96)	-7.46	-7.19	0.003
Water Pans	4(2.94)	4(3.10)	-0.16	24(20.0)	16(12.0)	7.76	7.76	0.431
Rivers/streams	23(16.91)	47(36.3)	-19.52	10(8.33)	17(13.8)	14.67	14.67	0.018
Shallow wells	22(16.18)	4(3.10)	13.08	31(25.83)	28(21.1)	-896	-8.96	0.113
Piped	22(16.18)	12(9.30)	6.88	10(8.33)	10(7.75)	-6.3	-6.3	0.313
Household water treatment								
Yes	27(19.85)	23(17.83)	2.02	51(42.50)	83(64.34)	-21.84	23.86	0.050
No	109(80.15)	106(82.17)	-2.02	69(57.50)	46(35.66)	21.84	23.86	<0.001
Washing hands after visiting the latrine								
Yes	88(64.71)	9(70.4)	-5.83	61(50.83)	83(64.4)	-13.51	-7.68	0.001
No	48(35.29)	3(29.46)	5.83	59(49.17)	46(35.6)	13.51	7.68	0.002
Latrine ownership								
Yes	23(19.0)	52(40.3)	-21.3	64(48.1)	71(57.7)	-9.6	11.7	0.018
No	98(81.0)	77(59.7)	21.3	69(51.9)	52(42.3)	9.6	-11.7	0.008
Latrine Type								
Improved	62(26.1)	6(11.5)	14.5	51(79.7)	53(74.6)	5.1	-9.4	0.196
Un-improved	17(73.9)	46(88.5)	-14.5	13(20.3)	18(25.4)	-5.1	9.5	0.174
Open defecation sites								
Yes	83(68.6)	44(34.1)	34.5	67(50.4)	60(48.8)	1.6	-32.9	<0.001
No	38(31.4)	85(65.9)	-34.5	66(49.6)	63(51.2)	-1.6	32.9	<0.001

Table 3:
Under-Five Years Old Child Diarrhoeal Cases in the Study

Prevalence of diarrhoeal cases [% (95%CI)]				Relative Risk (RR) Reduction in the intervention group [%, p-value]		
Variable	Baseline(n=265)			Endline(n=249)		
	No. HH	Control (Rombo)	Intervention (Namelok)	Control (Rombo)	Intervention (Namelok)	
Overall	514	40.0 (32.5-49.2)	50.8 (42.6-60.6)	39.4 (31.7-48.9)	37.4 (31.8-44.0)	13.4%,p=0.072
Gender						
Female	405	40.7 (32.5-51.1)	51.9 (43.2-62.3)	36.6 (28.0-47.8)	35.2 (26.5-46.8)	32.1%,p=0.024
Male	109	37.0 (22.6-60.6)	42.9 (23.4-78.5)	30.8 (17.3-54.8)	48.7 (35.5-67.2)	13.7%, p=0.714
Marital status						
Single	23	30.8 (13.6-69.5)	0	50.0 (18.8-100)	16.7(2.8-99.7)	100% p=0.001
Married	466	38.6 (30.6-48.7)	50.4 (42.1-60.4)	33.6 (26.0-43.6)	37.6(29.5-47.9)	25.4%, p=0.056
Divorced	13	66.7 (30.0-100)	0	0	62.5(36.5-100)	100%, p=0.001
Widowed	12	80.0 (51.6-100)	0	0	75.0(42.6-100)	100% p=0.001
Level of education						
None	250	43.8 (33.1-57.8)	56.0 (45.8-68.4)	48.2 (36.8-63.2)	57.7 (45.7-72.8)	3.0%, p=0.849#
Primary	204	37.5 (26.0-54.0)	42.4 (28.5-63.1)	27.8 (18.1-42.7)	30.5 (20.8-44.8)	28.1%, p=0.243
Secondary	49	42.1 (24.9-71.3)	44.4 (21.4-92.3)	0	16.7 (4.7- 59.1)	62.5%, p=0.188
Tertiary	11	0	33.3 (6.7-100)	0	0	100%, p=0.001

Perception of water sources: Many households in the intervention group expressed increased confidence in their water safety post-intervention. One participant stated,

"After the program, we learned how to treat our water properly. Now I feel safer giving it to my children."

This supports quantitative findings showing significantly higher safe water usage in this group, linking statistical data to lived experiences.

Open defecation practices:

Participants noted a greater awareness of hygiene and sanitation due to the intervention. One said,

"Before, we used to defecate in the open. Now, everyone is using proper latrines because we understand the health risks."

This aligns with quantitative data demonstrating reduced open defecation rates.

Handwashing practices: While participants recognized the importance of handwashing, actual practices varied due to barriers like soap and water availability. One participant mentioned,

"We know we should wash our hands after using the latrine, but sometimes we run out of soap."

Although quantitative data indicated a trend toward reduced handwashing ($p=0.001$), qualitative insights exposed practical

challenges that need addressing in future interventions.

Education and outreach: Participants stressed the importance of ongoing education after the intervention. One noted,

"We need more sessions to keep us reminded about hygiene. It is too easy to forget what we learned."

This aligns with demographic data indicating low educational attainment and emphasizes the need for continuous outreach to reinforce safe WASH practices and foster long-term behaviour change.

Discussion

The study findings reveal a predominantly female population, with a significant majority aged under 30 years. This demographic skew could reflect sociocultural trends where women often take primary responsibility for household water management and health decisions¹⁹. Furthermore, the high percentage of individuals with no formal education and having only primary education indicates determinants that could influence not only the effectiveness of health interventions but also the perceived importance of education in promoting health-seeking behaviours²⁰.

As such, the significant presence of a married population suggests a potential for familial support structures that could enhance adherence to health interventions, yet the low educational levels hint at ongoing barriers.

Table 4:
Bacteriological Quality at the Household Level

Month	Group	Total Average Coliform Count (MPN/100ML)	Total Average E.coli (MPN/100/mL)
1	Control	423	0
	Intervention	494	2
2	Control	397	0
	Intervention	486	0
3	Control	417	0
	Intervention	354	0
4	Control	358	0
	Intervention	265	0
5	Control	361	0
	Intervention	227	0
6	Control	366	0
	Intervention	195	0

Another aspect is the household economic status, which is moderate economic standing, that correlates with limited access to resources required for implementing safe water practices or proper sanitation. Similar findings have been reported by Ghosh and colleagues (2019), indicating that economic factors play a significant role in determining water, sanitation, and hygiene outcomes²¹. However, while comparing expenditure levels across groups, the study did not reveal significant differences.

The findings revealed significant differences in hygiene practices between the two groups. The intervention group showed higher rates of handwashing with soap, improved sanitation access, and greater community engagement in hygiene promotion. This aligns with previous studies which emphasize that integrated health education enhances hygienic behaviour and compliance²². In terms of health outcomes, the intervention group reported a lower incidence of diarrheal diseases among children under five, compared to the control group. This disparity can be attributed to heightened community awareness around sanitation issues fostered by community health clubs. Similar findings were reported by a study, which highlighted that combining community-driven initiatives with effective health education leads to improved health outcomes and reduced morbidity²³.

Previous research has indicated that the integration of health interventions with sanitation efforts enhances public health outcomes significantly. For instance, a study conducted in Ethiopia found that integrated approaches were more effective in reducing waterborne diseases than sanitation alone²⁴. In our findings, the intervention group, which received both community-led total sanitation and community health clubs, demonstrated significantly improved bacteriological water quality compared to the control group utilizing only community-led total sanitation. This aligns with the findings of several studies that reported that integrated health education along with sanitation initiatives resulted in lower

microbial contamination levels in community water sources. Moreover, the success of the intervention group can be attributed to the enhanced community engagement and education that community health club programs provide. A meta-analysis study emphasized that combined interventions targeting both sanitation and health education led to a marked decrease in pathogenic bacteria in drinking water sources.

The findings indicate that the intervention group had a lower prevalence of diarrheal diseases compared to the control group, suggesting that the integration of community health clubs with community-led total sanitation may enhance health outcomes for children. Previous studies have emphasized the importance of holistic health approaches in tackling childhood diseases. For instance, a study by Hutton and Chase found that community-led total sanitation significantly reduced diarrhoea incidence, attributing this to improved sanitation practices. However, they noted that integrating health education and community engagement strategies could further amplify these positive effects²⁵. Similarly, a systematic review by Waddington highlighted that interventions combining sanitation improvements with health promotion led to a 20% reduction in diarrhoea prevalence among children under five²⁶.

The findings of this research contribute to the existing literature by providing evidence that combining community-led total sanitation with community health clubs not only strengthens community hygiene practices but also enhances awareness and access to healthcare services. This aligns with the conclusions drawn by a study conducted in Rwanda, which reported that community-based health interventions led to substantial decreases in childhood diarrhoea rates through increased utilization of health services and improved caregiver knowledge²⁷.

The intervention group exhibited higher awareness of health impacts due to integrated health education from community health clubs. This aligns with findings from

previous studies which suggest that integration leads to an enhanced understanding of disease prevention linked to sanitation²⁸. Studies indicate that community ownership is pivotal for sustaining sanitation initiatives. The intervention group reported greater feelings of ownership and involvement, given the participatory elements of both community-led total sanitation and community health club approaches. The comparative analysis of perceived ownership revealed valuable insights.

Overall, the data supports the notion that integrated approaches are more effective in reducing childhood diarrhoea prevalence than sanitation-focused interventions alone. Future research should continue to explore the synergistic effects of combined health interventions to further inform public health strategies aimed at combating preventable diseases in young children.

Strengths and Limitations of the Study

Caregiver-reported diarrhoea cases may be inaccurate due to self-reporting, potentially leading to over- or underestimation and explaining the insignificant differences between groups. Additionally, self-help groups may create socio-economic variances compared to the general population. However, our mixed-methods approach has improved our understanding of the research issue and the external validity of the results.

Conclusion

This study demonstrated that integrating community health clubs with community-led total sanitation significantly enhanced hygiene practices and health outcomes compared to traditional sanitation interventions. The intervention group experienced increased safe water use, improved sanitation, and reduced open defecation, resulting in fewer diarrheal diseases in children under five. While both groups improved, the intervention group exhibited significantly higher rates of positive behaviour changes, such as treating water and handwashing, despite

some challenges with soap access. Focus group discussions highlighted the importance of ongoing education to maintain health improvements, underscoring how enhanced community engagement through education fosters lasting behavioural change and better public health outcomes.

Recommendations

We recommend conducting regular community workshops on hygiene and safe water practices, ensuring households have reliable access to soap and water through partnerships or public handwashing stations, and involving residents in decision-making and program implementation to strengthen community ownership. The government should integrate health and sanitation initiatives into supportive policies. Outreach efforts must be tailored to low-awareness groups, adapting to local cultures and leveraging community leaders for effective communication. Finally, future studies should evaluate the long-term sustainability of behaviour changes resulting from these interventions.

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