

Assessing Knowledge, Attitudes and Practices towards Community-led Total Sanitation (clts) in Bunga Community of Twapia Ndola

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Abstract

Introduction: Community-led total sanitation is a community approach of inspiring and empowering communities to stop open defecation and to build and use latrines, without offering external subsidies to purchase hardware such as pans and pipes.

Objectives: The aim of this study was to determine the knowledge, attitudes and practices towards community led total sanitation among the residents of Bunga community of Twapia Ndola.

Methodology: A cross-sectional study design was used among females and males between 18 and 60 years of age, using a questionnaire. The data was then entered and analyzed using Statistical package for social sciences (SPSS) version 26.. Multivariate analysis was used in the correlations of knowledge, attitudes, and practices and intestinal worm infestation.

Results: For this study, a total of one hundred and thirty households from Bunga community were recruited upon obtaining informed consent from them and having met the criteria for selection. A total of 130 individuals were interviewed giving the response rate to be at 100%. This study determined the levels of knowledge of the participants to be 63(48.5%) and 67 (51.5%) for poor and good knowledge levels respectively. Furthermore, it revealed that 107(82.8%) attributed financial challenges as the main difficulty hindering their improved toilet situation and to a lesser extent, 1(0.8%) no space indoor or outdoor had the lowest frequency. Generally, a good attitude 89 (68.5%) was found among the participants. When asked where their family members usually defecate from when home, 90(69.8%) and 96(73.8) used their own toilet for children and adults respectively. The p value was > 0.01 ($p=0.745$) between the knowledge levels and attitude, and also >0.01 ($p=0.660$) between knowledge and practice levels. However, the correlation between attitude and practice levels had a p value that was <0.01 ($p=0.008$).

Conclusion/Recommendations: The overall knowledge levels in this study were poor. Associated factors that were significant in hindering people from improving their sanitation included financial challenges, no materials available, no laborers available and no support/assistance. Most of the people used their own toilet to defecate for both children and adults belonging to the same household with adults never using open defecation and only some children of a few houses using open defecation sometimes. No correlation was found between knowledge and practice levels. However, a significant correlation was found between attitude and practice of the households. There is need to for more holistic methods of ways to penetrate the community and make sure people are adequately educated about community led total sanitation.

Introduction

Background

Community-led total sanitation (CLTS) is the methodology which involves facilitating a process of inspiring and empowering communities to stop open defecation and to build and use latrines, without offering external subsidies to purchase hardware such as pans and pipes [1-9]. CLTS concentrates on ending open defecation (OD) as a first significant step and entry point to changing behavior. It starts by enabling people to do their own sanitation profile through appraisal, observation and analysis practices of open defecation and the effects these have [10]. It represents a radical alternative to conventional

top-down approaches to sanitation and offers hope of achieving the Millennium Development Goals [11-13]. In its directly contribution to goal number 7 of Millennium Development Goals of water and sanitation, Kamal (2005) echoes that it also indirectly contribute to combating major diseases, particularly diarrhea (Goal 6), improving maternal health (Goal 5) and reducing child mortality (Goal 4). In contrast to state-led initiatives to improve sanitation that tend to focus on hardware and subsidies, community led total sanitation emphasizes on community action and behavior change as the most important elements to better sanitation. It focuses on enabling the local community to analyze the problems of faecal-oral routes of disease spread and of finding locally appropriate, rather than externally prescribed, solutions. Through exercises such as transect walks, mapping of open defecation sites, and the various routes of disease spread (e. g. through flies and animals), as well as calculation exercises aimed at drawing villagers' attention to the amount of faeces they are ingesting. A process is ignited where people are moved into action, drawing on local resources and knowledge to construct sanitary facilities that fit their particular needs and desires, within the constraints of household priorities and resources [13].

Community led total sanitation approach originates from Kamal Kar's evaluation of Water Aid Bangladesh. He was in collaboration with VERC, the local organization of traditional water and sanitation program in late 1999 and into 2000. Since 2000, through hands-on training by Kamal Kar and through

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the support of many agencies and assisted by cross-country visits, CLTS has spread to other organizations in Bangladesh and to other countries in South and South East Asia, Africa, Latin America and the Middle East. Committed champions in organizations have played a crucial part. To date, CLTS has gone to scale most in Bangladesh, India, Cambodia, Indonesia and Pakistan. It has also been introduced through these trainings with varying degrees of take up in China, Mongolia, and Nepal. More recently it has started with promising in Ethiopia, Kenya and Zambia [11].

Open defecation spreads a vicious cycles of disease and poverty. The countries where open defecation is highly practiced have high prevalence of death of children aged less than 5 years as well as the highest levels of malnutrition and poverty and big disparities of wealth. In 2015, 2.9 billion people of the global population, used a safely managed sanitary facility service which is defined as use of a toilet or improved latrine that are not shared with other households, with a system in place to ensure that excreta are treated or disposed of safely. However 2.3 billion people still did not have basic sanitation facilities such as toilets or latrines. Of these, 892 million still do practice open defecation in open water bodies, behind bushes, gutter and even in streets. (WHO, 2018).

Problem statement

Inadequate sanitary facilities results in the practice of widespread open defecation. This has a negative health and social effects in communities, particularly in terms of diarrheal diseases. Despite significant progress in Bangladesh, and some improvement in India in recent years, sanitation coverage in the rural areas of South Asia continues to be a matter of concern. It was estimated in 2003 that approximately 76 percent of the total population of the region still lack access to adequate sanitation. Narrowing it down to Zambia 4 million people use unsanitary or shared latrines, 2.1 million have no latrine at all and defecate in the open. Thus poor sanitation costs Zambia approximately US\$194 million annually in treating diarrheal diseases and combating poor sanitation. This was in accordance to a desk study carried out by The Water and Sanitation Program (WSP). This sum is the equivalent of US\$16.4 per person in Zambia per year or 1.3% of the national GDP and it is estimated that the poorest 20% is 12 times more likely to practice open defecation than the richest 40%. Despite the UNICEF WASH program, currently working in 68 rural districts across the 10 provinces of Zambia, to combat poor sanitation, the practice of open defecation by the majority of people in the region is still the most serious environmental threats to public health. Although CLTS has spread to Zambia, not much study of the levels of knowledge, attitudes and practices of it has been done. Therefore, this study will seek to determine the Knowledge, attitudes and practices of Community-Led Total Sanitation (CLTS) in Bunga community of Twapia.

Study justification

The results to be obtained from this study will be of vital use by the government through the Ministry of Health as baseline information for future and larger studies to be conducted in the country concerning the promotion and expansion programs on Community-Led Total Sanitation. Policy intervention, diverse strategies and knowledge gap filling with variety of media, can be of good help to achieve this objective goal of open defecation free which could reduce the disease burden. This will be beneficial to the community, the ministry of health and the country at large.

Literature Review

Researchers have shown that defecation in the open field or in the bush was common among the rural people of Bangladesh. A few rich and educated families had latrines some decades ago, but these were not sanitary. Defecation in the open was a big problem for women as they cannot go out to do this during the daytime. They had to go either very early in the morning or wait until night. The destruction of bush land and new settlements reduced the scope for open defecation. This resulted in defecation along the roadsides or river/canal banks. Children defecate anywhere they like and mothers did not bother to put the faeces in a safe place. As the result water supply was infected leading to diarrheal disease in rural areas.

After the intervention of the CLTS program, the researchers have showed that people now have realized the need to share responsibilities with the government to ensure total sanitation. Recent experience shows that people have benefited from CLTS programs in almost all the intervention areas. Poor people are less likely to suffer from diarrhea, which means treatment costs have reduced significantly. This has resulted in more working days, which means increased income. People have also been motivated to start sanitation businesses; they are now producing low cost latrine materials and selling these in the local market [6]. In fact, specialists have given some basic practical guideline for triggering Community-Led Total Sanitation. It involves five steps which can be modified or changed in accordance with the situation. These steps include; introduction and rapport building, participatory analysis, ignition moment, action Planning by community and finally following up [10]. Introduction and rapport building is the first step in the process when one arrives in the community.

It requires one to explain the purpose of the visit and build rapport with the community. This may be done by having some discussion with a few community members during an informal walk through the community. Once they get interested in the discussion, they can be encouraged to call other members of the community together.

In this process one should remember that they are just assisting the community to carry out their own analysis of the sanitation situation. Once a good number of the community members have gain interest, the next step is participatory analysis. This involves analyzing the sanitary facilities and open defecation areas in the community. This may be done by having a transect walk. A transect walk involves walking with community members through the community from one side to the other, observing, asking questions, and listening to them [9]. Mapping of defecation areas may be also a useful tool for getting all community members involved in a practical and visual analysis of the community sanitation situation. It involves creating a simple map of the community to locate households, resources and problems to stimulate discussion. Additionally calculations of the amount of faeces produced helps in illustrating the magnitude of the sanitation problem. This step is then followed by an interesting stage the ignition moment. It is a stage reached when the community arrives at a collective realization that due to open defecation everyone is ingesting each other's faeces, and this will continue unless open defecation is stopped totally. It is precisely at that moment that the facilitators should thank the community for the analysis and conclude the process. If some positive attitude toward CLTS begins, then action planning should come into play, this involves extending help and advice. Assuring the community how famous it will be as the first open defecation free community. Finally, in order to ensure that CLTS is sustained and improvements in latrines are made over the long term, some community follow-up is done. This can be done by identifying natural leaders and encourage them to take charge of ensuring that action plans are followed through and changes in behavior are sustained [9].

Studies have shown that communities respond to CLTS approach differently. Some are inspired to make changes immediately while others are undecided at first but later changes after seeing or hearing how other communities have changed. In general, the more successful villages have Enthusiastic leadership. Since its birth and early spread of Community-Led Total Sanitation in Bangladesh, this approach has also been introduced in Cambodia, India, Indonesia, Mongolia, Nepal, Uganda and Zambia. However CLTS in Africa has been not promoted much as compared to other parts of Asia, but it is possible that interest will continue to grow as lessons from other regions are consolidated, documented and shared. Kamal and Katherin in 2000, CLTS reached Zambia by Kamal Kar as he went to evaluate a Water Aid WATSAN program in Monzi district. 7 years later, UNICEF in conjunction with the Government of Zambia piloted the CLTS approach in Choma District of the Southern Province, where the coverage was 40%. Twelve communities were triggered by trained CLTS facilitators and within two months, sanitation coverage increased from 23% to 88% within a population of 4536 and 75% of the villages were verified as open defecation free (ODF).

Following the success of the pilot project, "The 3 Million People Sanitation Program" was launched in April 2012 by the Minister of Local Government and Housing in Zambia. Twelve districts including Katete in Eastern Province of Zambia were selected for the pilot that took place between April and June 2012

[14-17]. Initially it started promising but due to a lack of follow-up, no further information on its spread has been documented. Likewise in Uganda, Kamal Kar tested CLTS in Kibale district but it started to decline as it also lacked follow-ups while he was still there in 2001. As he was working with district development program supported by Ireland Aid. He received no further information about its progression. Mozambique and Nigeria, Eleven Water Aid staff from Mozambique visited a CLTS program in Bangladesh in August 2004, with three further people from Nigeria visiting Bangladesh in October 2004 but still no further information has documented also [9].

A study by Susan and Anggum (2014) on "Shaming and sanitation in Indonesia: A return to colonial public health practices?" showed that 97% of total population in the Panggungsari and the Rejowinangun villages had access to at least a public toilet after having meetings through the standard CLTS process of a walk of shame and defecation mapping. In this study the all aim was to trigger subsequent latrine construction. The first three months was considered the hardest period in triggering, but after a further five months, it gave a positive response. However, according to the Kepala Desa (village head) in Panggungsari, despite the supposedly participative approach of the CLTS, the villagers did not want a sanitation project and preferred an adequate irrigation system for their farm land and a program for re-planting the cleared forest located near their farmland.

A similar research was done in Zambia by Bulaya C, et al. [2] on "Preliminary evaluation of Community-Led Total Sanitation for the control of *Taenia solium* cysticercosis in Katete District of Zambia". The objective of the research was to conduct a preliminary evaluation of the effectiveness of CLTS as a control measure against porcine cysticercosis in the Katete District. The research was done by comparing the seroprevalence of *T. solium* porcine cysticercosis and the knowledge, attitude and practices of the pig farmers before and 8 months after the implementation of the CLTS intervention in 9 villages in the Katete District of the Eastern Province of Zambia.

A comparative cross-sectional research design was used and it involved comparing variables from the same villages before and after CLTS as an intervention had been carried out. The results show a total of 379 pig serum samples (104 from 64 households at baseline and 275 from 89 households post-intervention) were examined for cysticercosis. The questionnaire was administered to 64 and 89 respondents from both sampling rounds, with a response rate of 19% and 26%, respectively. Likewise the information on the knowledge and awareness of cysticercosis revealed that a significant number of the respondents over 80% in both sampling rounds had heard or observed porcine cysticercosis. Furthermore, more of respondents questioned at baseline (70.9%) were aware of cysticercosis as a pig disease as compared to those at post-intervention (43.2%, p -value = 0.001). At baseline, 29.1% of the respondents were unaware of pig cysticercosis compared to 56.8% at post-intervention. However the research revealed that CLTS as an intervention tool did not lead to a reduction in *T. solium* infections in pigs. The research also revealed that the risk factors and awareness of *T. solium* control were not significantly improved due to the fact that the CLTS program did not incorporate health education. The study recommends that CLTS should be monitored over a longer period of time [2].

Main objectives

To determine the knowledge, attitudes and practices towards community led total sanitation among the residents of Bunga community of Twapia Ndola.

Specific objectives

- To establish the level of knowledge towards community led total sanitation in Bunga community.
- To assess the attitude towards open defecation in Bunga community.
- To determine the existence of community led total sanitation promotion in Bunga community.

Research questions

- What are the levels of knowledge towards community led total sanitation in Bunga community?

- Do the resident practices open defecation?
- Are there promotions of community led total sanitation?

Measurement

In this study, the following terms will be taken to mean:

Knowledge: Refers to the expertise and skill acquired by a person through experience or education; the theoretical or practical understanding of a subject.

Attitudes: Evaluative judgment towards a specified behaviour or event that results in perception of favour or disfavour that predisposes an individual to adopt or reject a health related behaviour.

Practice: The habit or customary action or way of doing something.

Knowledge, Attitudes and practices will be assessed using a questionnaire as follows; zero correct response will mean no knowledge while one to three correct responses will mean they are knowledgeable on CLTS.

Methodology

Study site

The study was done in Bunga community. Bunga community is an extension of Twapia community alongside Kafubu River. It shares borders with Kanyala and Lubuto by two rivers Bunga and Kafubu respectively in Ndola town.

Study population

The study population consisted of males and females above 18 years of age who are residents of Bunga community.

Study design

A cross-sectional study design was used as it is relatively easy, quick and inexpensive and it is also good design for hypothesis generation.

Sample size determination

Formula used for sample size determination; $n = Z^2 PQ/d^2$ adjusted by $n/(1 + n/N)$

Where,

n = Sample size of households.

P = Proportion of households ended open defecation free or achieved community led total sanitation. No previous similar study was carried out in the area. So, to get maximum sample size, P was taken as 50%.

d = Degree of accuracy required (sampling error) is 5%

Z = Standard score for 95% confidence level is 1.96.

$Q = 100 - p = 50$

N = Total population number of household = 200

$n = Z^2 PQ/d^2$

Sample size = $n/(1 + n/N)$

$= 385/(1 + 385/200)$

$= 130$

$n = [(1.96)^2 * 50 * 50]/(5 * 5)$

$n = 384.16$

$n = 385$

Sampling

The participants in this study, were selected using simple random sampling in which, each participant had an equal chance and independent chance of selection in the sample.

Inclusion criteria and exclusion criteria

Male and female participants between 18 and 60 of age were included while residents below 18 or above 60 years of age were excluded.

Data collection

Materials used in this study were the individual questionnaires that were administered to the participants and personal interviews for individuals unable to complete questionnaires.

Data analysis and processing

The data that was generated from the participants in this study was quantitative type of data. Hence the data collected was entered and was analyzed using IBM SPSS version 26.

Data management

The data was entered weekly upon collection. This data comprised of soft copy data as well as the hard copy data. The soft copy data was backed up on other computers while hard copy data was put in files then put away in a safe.

Data storage

The data obtained in this study was stored safely with a good security system that can be only accessed by the researcher. All soft data was encrypted. On the other hand, hard copy data was locked up in a safe and a password code was put in place for security purposes.

Ethical Consideration

Ethical approval was sought from the Tropical Disease and Research Centre (TDRC) ethics committee. The participants were recruited based on their willingness to participate in the study. Adequate information about the

study was given in order not to breach the right to accept or refuse participation. Respondents were treated with respect and confidentiality was highly observed. With reference to the covid 19 pandemic and according to the health guidelines on prevention of the spreading of the said disease, every participant was required to have a facemask on, observe social distance and use hand sanitizers before and after the interview.

Study Limitation

The study would have been a very good if it had covered a larger area like the entire district; however, it had been limited due to inadequate time and insufficient finances. It would have also been better if the actual areas where open defecation was taking place could be investigated to see how they were for association with spread of diseases.

Results

For this study, a total of one hundred and thirty households from Bunga community were recruited upon obtaining informed consent from them and having met the criteria for selection. Out of the calculated sample size (130) a total of 130 individuals were interviewed making the response rate to be at 100%. The socio-demographic characteristics of participants such as age and sex of the respondent were obtained, the knowledge level, attitude and practice.

Demographic characteristics of study participants

The demographic characteristics are summarized in Tables 1 and 2. Out of 130 participants, the majority were female 100(76.9%) while only 30(23.1%) males took part in the study with the age ranging from 19 years to 74 years with a mean of 35.8 years (Table 3).

Table 1. Definition of operations.

Type of Variables	Indicators	Scale of measurement	
Dependent	Prevalence defecation of open	Absence defecation of open	Presence or absence of open defecation
Independent	Levels of knowledge on community led total sanitation	No. of correct responses	0- poor 1-3 good
	Attitudes community sanitation towards led total	Practice of community led total sanitation	Good attitude Bad attitude

Table 2. Definition of operations (Independent variables).

Variables	Operational	Indicators	Scale of Measurements
Independent Variables	Definitions		
Age of participant	Present age of participant at time of interview		Ordinal
Sex of Participant	Gender of the participant	1. Male 2. Female	Nominal
Information about sanitation	Received, heard or saw information about sanitation in previous year	1. Yes 2. No	Nominal
Open defecation affect community	The health of the community can be affected by the open defecation of one person	1. Yes 2. No	Nominal
Own toilet	Does the participant have a toilet in their compound	1. Yes 2. No	Nominal
Difficulties for improving toilet situation	The main difficulties hindering the improvement of the toilet situation	1. Financial challenges 2. No space out door or outdoor 3. No materials 4. No laborers available 5. No support/assistance 6. No permission to build 7. Lack of know-how 1. Other	Ordinal

Benefits of using own toilet	How the participant benefits from using their own toilet	<ol style="list-style-type: none"> 1. Improved health 2. More privacy 3. Improved hygiene 4. Improved social status 5. Improved safety 6. Don't know 7. More comfort 8. Others 	Ordinal
Comfortable with current toilet situation	Is the participant comfortable with their current toilet situation	<ol style="list-style-type: none"> 1. Very comfortable 2. Fairly uncomfortable 3. Comfortable 4. Uncomfortable 	Ordinal
Invest to improve sanitation situation	Would the participant be willing to invest to improve their sanitation situation	<ol style="list-style-type: none"> 1. Yes 2. No 	Nominal
Place of defecation when home	The place Adults of their household defecate from	<ol style="list-style-type: none"> 1. In own toilet 2. In neighbor's toilet 3. In public toilet 4. Open defecation 5. Others 	Nominal
	The place children of their household defecate from	<ol style="list-style-type: none"> 1. In own toilet 2. In neighbor's toilet 3. In public toilet 4. Open defecation 5. Others 	Nominal
Practice open defecation	Adults of household practice open defecation	<ol style="list-style-type: none"> 1. Often 2. Sometimes 3. Seldom 4. Never 	Ordinal
	Children of household practice open defecation	<ol style="list-style-type: none"> 1. Often 2. Sometimes 3. Seldom 4. Never 	Ordinal

Table 3. Frequency distribution of demographic characteristics.

Variables	Indicator	Frequency	Percent	CumulativePercent
Age	19-29 years	52	46.8	46.8
	30-49	57	51.4	98.2
	>50	2	1.8	100.0
	Total	111	100.0	
Number of children below five	One child	61	56.5	56.5
	Two children	41	38.0	94.4
	At least 3 children	6	5.6	100.0
	Total	108	100.0	
Sex	Male	30	23.1	23.1
	Female	100	76.9	100.0
	Total	130	100.0	

Source: Field data

Attitude levels

The frequencies of the attitudes questions are tabulated in Table 4. It shows that 107(82.8%) attributed financial challenges as the main difficulty hindering their improved toilet situation. To a lesser extent 1 (0.8%) no space indoor or outdoor had the lowest frequency. The results also showed that improved health 124(95.4%), improved hygiene 100(76.9%) and more comfort 46 (35.4%) were identified as the main positive benefits of using their own toilet.

When asked if they had toilets in their compounds, the majority of participants 96 (73.8) said they had while 34 (26.2%) did not. In addition, 88 (67.7%) were uncomfortable with their current sanitation situation. A good attitude 89 (68.5%) was found among the participants.

Correlation

Tables 5 to 12 illustrate the two tailed tests of correlation between different values. The p value was > 0.01 (p=0.745) between the knowledge levels and attitude, and also >0.01 (p=0.660) between knowledge and practice levels. However, the correlation between attitude and practice levels had a p value that was <0.01 (p=0.008).

Practice levels

The results in Table 9 show that 121(93.1%) of the participants were willing to invest their own resources to improve their financial situation. When asked where their family members usually defecate from when home, 90(69.8%) and 96(73.8) used their own toilet for children and adults respectively.

Discussion

This is the first KAP study to assess knowledge, attitude and practices in Bunga community. This study determined the knowledge, attitude and practices toward community led total sanitation in Bunga community of Twapia, Ndola. According to this study, the knowledge levels were low. This study determined the levels of knowledge of the participants to be 63(48.5%) and 67 (51.5%) for poor and good knowledge levels respectively. This however, is not surprising because only 56(43.1%) of the participants had (in the previous year) seen, heard or received information about sanitation from radio, newspaper or road shows while the majority 74(56.9%) had not. This shows that there are no strong enough interventions or measures being taken to ensure that the people of

Table 4. Assessment of knowledge.

Variables	Indicator	Frequency	Percent	Valid Percent	Cumulativepercent
In the last year, have you seen, heard or received any information about sanitation from the radio, newspaper or road shows?	No	74	56.9	56.9	56.9
	Yes	56	43.1	43.1	100.0
	Total	130	100.0	100.0	
Can open defecation of one person affect health in a community?	No	38	29.2	29.2	29.2
	Yes	92	70.8	70.8	100.0
	Total	130	100.0	100.0	
Knowledge Levels	Poor knowledge	67	51.5	51.5	51.5
	Good knowledge	63	48.5	48.5	100.0
	Total	130	100.0	100.0	

Source: Field data

Table 5. Knowledge levels.

	Knowledge Levels	Frequency	Percent
Valid	Poor knowledge	67	51.5
	Good knowledge	63	48.5
	Total	130	100.0

Table 6. Knowledge against demographics.

Variables	Indicator	Knowledge levels		Total
		Poor knowledge	Good knowledge	
Sex	Male	16	14	30
	Female	51	49	100
	Total	67	63	130
Age categorial	19-29 years	29	23	52
	30-49	29	28	57
	>50	1	1	2
	Total	59	52	111

Table 7. Difficulties of Improved Sanitation and positive benefits of using own toilet.

Variables	Indicator	Frequency(N)	Percent	Percent ofCases
What are the main difficulties for improved toilet situation?	Financial challenges	107	59.8%	82.3%
	No space indoor or outdoor	1	0.6%	0.8%
	No materials available	28	15.6%	21.5%
	No laborers available	19	10.6%	14.6%
	No support/assistance	15	8.4%	11.5%
	Others, specif	9	5.0%	6.9%
	Total	179	100.0%	137.7%
What are the positive benefits of using your own toilet?	Improved health	124	43.4%	95.4%
	More privacy	8	2.8%	6.2%
	Improved hygiene	100	35.0%	76.9%
	Improved social status	2	0.7%	1.5%
	Improved safety	6	2.1%	4.6%
	More comfort	46	16.1%	35.4%
	Total	286	100.0%	220.0%

Source: Field data

Table 8. Sanitation satisfaction and attitude levels.

Variables	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
Do you have toilets on the compound?	No	34	26.2	26.2	26.2
	Yes	96	73.8	73.8	100.0
	Total	130	100.0	100.0	-

Are you comfortable with your current sanitation situation?	Very comfortable	22	16.9	16.9	16.9
	Comfortable	6	4.6	4.6	21.5
	Fairly Uncomfortable	14	10.8	10.8	32.3
	Uncomfortable	88	67.7	67.7	100.0
	Total	130	100.0	100.0	-
Attitude levels	Bad attitude	41	31.5	31.5	31.5
	Good attitude	89	68.5	68.5	100.0
	Total	130	100.0	100.0	-

Source: Field Data

Table 9. Assessment of practice levels.

Variables	Indicator	Frequency	Percent	Valid Percent	Cumulative Percent
What are you and your household members doing to maintain good condition of toilets?	Both answers show bad practice	57	43.8	43.8	43.8
	One answer show good practice	62	47.7	47.7	91.5
	Both answers show good practice	11	8.5	8.5	100.0
	Total	130	100.0	100.0	-
Would you be willing to invest your own financial resources to improve your sanitation?	No	8	6.2	6.2	6.2
	Yes	121	93.1	93.1	99.2
	2.00	1	.8	.8	100.0
	Total	130	100.0	100.0	-
Where do you and your household members usually defecate when at home?	Open defecation	4	3.1	3.1	3.1
	In neighbour's toilet	35	26.9	27.1	30.2
	In own toilet	90	69.2	69.8	100.0
	Total	129	99.2	100.0	-
	Missing System	1	.8	-	-
	130	100.0	-	-	
	In neighbour's toilet	34	26.2	26.2	26.2
	In own toilet	96	73.8	73.8	100.0
Is open defecation practiced by you or any other household members?	Total	130	100.0	100.0	-
	Often	13	10.0	10.1	10.1
	Sometimes	48	36.9	37.2	47.3
	Seldom	3	2.3	2.3	49.6
	Never	65	50.0	50.4	100.0
	Total	129	99.2	100.0	-
	Missing System	1	.8	-	-
	Total	130	100.0	-	-
Where do you and your household members dispose young child faeces?	Often	6	4.6	4.6	4.6
	Sometimes	2	1.5	1.5	6.2
	Seldom	7	5.4	5.4	11.5
	Never	115	88.5	88.5	100.0
	Total	130	100.0	100.0	-
	Burn	15	10.9%	-	-
Bury	18	13.0%	-	-	
Where do you and your household members dispose young child faeces?	Throw into drainage	4	2.9%	-	-
	Throw into garbage	16	11.6%	-	-
	Throw into private toilet	73	52.9%	-	-
	Throw into forest/bush	10	7.2%	-	-
	Throw into public toilet	2	1.4%	-	-
	138	100.0%	-	-	

Table 10. Correlation between knowledge and attitude.

Variables	Knowledge levels	Attitude levels
Knowledge levels	Pearson Correlation	1
	Sig. (2-tailed)	.029
	N	130
Attitude levels	Pearson Correlation	.745
	Sig. (2-tailed)	1
	N	130

Table 11. Correlation between knowledge and practice levels.

Variables	Knowledge levels	Practice level	
Knowledge levels	Pearson Correlation	1	.039
	Sig. (2-tailed)	-	.660
	N	130	130
Practice level	Pearson Correlation	.039	1
	Sig. (2-tailed)	.660	-
	N	130	130

Table 12. Correlation between practice and attitude levels.

Variables	Practice level	Attitude levels	
Practice level	Pearson Correlation	1	-.230**
	Sig. (2-tailed)	-	.008
	N	130	130
Attitude levels	Pearson Correlation	-.230**	1
	Sig. (2-tailed)	.008	-
	N	130	130

** . Correlation is significant at the 0.01 level (2-tailed).

Table 13. Knowledge and practice tabulation.

Variables	Practice Level		Total	
	Bad practice	Good practice		
Knowledge levels	Poor knowledge	27	40	67
	Good knowledge	23	40	63
Total		50	80	130

Table 14. Work plan.

Task to be Performed	March 2019	March 2022	April 2022	May 2022
Handing in projectidea				
Approval handing inof research proposal				
Data collection				
Data Entry				
Data Analysis				
Report writing				
Submission of report				

Table 15. Budget.

Item	Qty	Unit Price	Total Price
Rim of plain paper	3	35	105
Pens/ pencils	8	4	24
Transport	2	400	800
Interpreter/Assistant	2	500	1000
Food allowance	-	750	750
Photocopying of questionnaireconsent	-	200	200
	-	Total	K2,899

Bunga community are educated on the importance of sanitation. Another plausible explanation is that most of the participants were just not exposed to the information and a targeted community outreach programme may better suited. Furthermore, most of the participants 92 (70.8%) agreed when asked if open defecation of one person could affect health in a community with only 38 (29.3%) not agreeing. Showing that they despite the lack of exposure, they knew that open defecation can be harmful to the community.

When asked if they had toilets in their compounds, the majority of participants 96 (73.8) said they had which is greater by 11.5%,15.4% than the study conducted (62.3%) by Tuli T, et al. [14] in rural Kebeles of Adama Woreda, East Shoa Zone, Oromia, Ethiopia and (58.4%) in Bahirdar Zuria district of North Ethiopia (Worku & Semahegn, 2013). Whereas less by 20.8% and 4.8% than the study shown in SNNP region of Ethiopia at Mirab Abaya (94%) and Alaba (69%) respectively (Behailu, Redaie, & D, 2010). The study

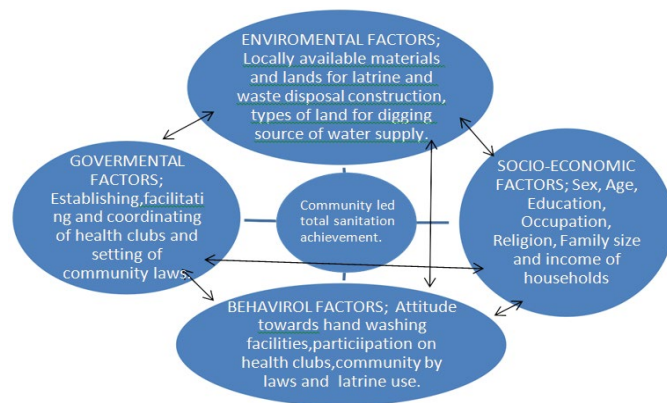


Figure 1. Conceptual/theoretical frameworks.

conducted at North Ethiopia of Denbia district displayed (86.8%) greater (Yimam, Kassahun, & Daniel, 2013) by 13% than this recent finding.

These differences among these demographic areas could be due to a number of reasons such as availability of local materials for latrine construction, continuous training, and support and follow up of health extension professionals. This study revealed that 107(82.8%) attributed financial challenges as the main difficulty hindering their improved toilet situation and to a lesser extent, 1 (0.8%) no space indoor or outdoor had the lowest frequency. Other reasons given where 28(21.5%) no materials available, 19(14.6%) no laborers available and 15(8.4%) 11.5% no support/assistance.

In addition, 88 (67.7%) were uncomfortable with their current sanitation situation showing that there's still a lot of potential to help the households improve their sanitation with proper sensitization and creation of an enabling environment as 121 (93.1%) of the participants were willing to invest their own resources to improve their financial situation. Generally, a good attitude 89 (68.5%) was found among the participants.

When asked where their family members usually defecate from when home, 90(69.8%) and 96(73.8) used their own toilet for children and adults respectively. Only 4(3.1%) households admitted to children using open defecation with no adults practicing it. The other alternative was using the neighbor's toilet to which 35 (26.9%) and 34 (26.2%) households agreed for children and adults respectively.

Tables 7 to 9 illustrate the two tailed tests of correlation between different values. The p value was > 0.01 ($p=0.745$) between the knowledge levels and attitude, and also >0.01 ($p=0.660$) between knowledge and practice levels. Showing that there was no significant relationship between knowledge levels and attitude levels, and knowledge levels and practice levels. Despite the knowledge levels being low, the attitude and practice levels were okay. However, the correlation between attitude and practice levels had a p value that was <0.01 ($p=0.008$). A significant relationship exists between attitude and practice levels. The nature of this relationship would require another study to further investigate it (Tables 13-15) (Figure 1).

Conclusion and Recommendations

The overall knowledge levels in this study were poor. This primarily being because sensitization programs to educate the public are not being properly implemented. The attitude levels were above average which was good. No correlation was found between knowledge and attitude. Finally, the practice levels were also above average with most of the participant being dissatisfied with their current sanitation situation. Associated factors that were significant in hindering people from improving their sanitation included financial challenges, no materials available, no laborers available and no support/assistance. Most of the people used their own toilet to defecate for both Children and adults belonging to the same household with adults never using open defecation and only some children of a few houses using open defecation sometimes. No correlation was found between knowledge and practice levels.

However, a significant correlation was found between attitude and practice of the households.

Conflicts of Interest

The authors certify that they have no affiliation with or involvement in any organisation or entity with a non-financial interest or stake in the subject matter of this manuscript. The authors did not receive any specific funding for this work.

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