

Review Article

Attainment of open defecation free status among Villages of Nthondo Area in Ntchisi District, Malawi

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Abstract

Using Community-Led Total Sanitation (CLTS) World Vision is implementing a five (5) year project (running from 2011 to 2016) in Traditional Authority Nthondo in Ntchisi District in Central Malawi. However, almost two years after triggering only 6 villages (13%) of 46 villages had attained open defecation free (ODF) status. This study was therefore carried out with the aim of exploring the reasons for the low attainment ODF status. Data was collected through household questionnaires, focus group discussions, key informant interviews and documentation review. Chi square tests were used to examine the relationship of the probable factors and ODF status. The study found that 40.1% of households were ODF. No association was found between ODF status and; age ($p=0.862$), sex ($p=0.114$), level of education ($p=0.983$), annual household income ($p=0.557$), knowledge of the characteristics of ODF household ($p=0.177$), knowledge of the benefits for not defaecating in the open ($p=0.348$) and knowledge of modes of transmission of ODF related diseases ($p=0.241$). The study, however, established an association between ODF status and number of follow up visits ($p=0.026$). The study concluded that triggering process did not achieve collective behaviour change in the community to take collective action.

Keywords: CLTS, follow up, knowledge, OD, socioeconomic

INTRODUCTION

Sanitation remains one of the biggest development challenges in all developing countries. Improving sanitation is the key to achieving the health-related Millennium Development Goals (MDGs) of reducing child mortality and combating disease (Sanan and Moulik, 2007). Around 2.6 billion people do not have access to a toilet (representing about 40% of the world's population) and instead practice open defecation (Bongartz et al., 2010). Shit carries disease and is a major killer and lack of sanitation also impacts on general well-being, human dignity and personal freedom (Bongartz et al., 2010). Improved sanitation coverage is lowest in Sub-Saharan Africa and South Asia, where it is much lower in rural areas than in urban areas and lowest of all amongst the poor (UNICEF and others, 2010). Around 6,000 people a day or 1.8 million a year (90% of whom are children) die of faecally-transmitted diseases. More children under the age of five die from diarrhoea than from HIV, malaria and tuberculosis put together; and many more are irreversibly debilitated and stunted by illness during their early years (Humphrey, 2009). Women and girls in particular are badly affected as they relieve themselves either before dawn or after dark, to avoid being seen being at risk of attack, rape and wild animals (Bongartz et al., 2010).

The coverage for improved latrines in Malawi stands at 8.8% (Kumwenda et al., 2014; National Statistical Office and ICF Macro, 2011) implying that 91.2% of the population is using unimproved latrines whose definition is not far from what may be taken as open defecation in CLTS. In Malawi basic sanitation refers to a facility without any hygienic

features such as a tight fitting drop hole cover, key shaped drop hole and foot rests that guide the appropriate positioning on the drop hole (Ministry of Irrigation and Water Development, 2006). For Malawi there are two levels of attainment of ODF status. Level 1-ODF is attained when every household uses a latrine with privacy, there is no faecal matter in the bush with sharing being acceptable. For Level 2-ODF every household has latrine with drop hole cover and hand washing facility and sharing acceptable; with all religious institutions, market centres and health centres in the catchment area having latrines with covers and hand washing facilities (Ministry of Agriculture, Irrigation and Water Development, 2011).

In 2009, 12% of Malawi's households practiced open defecation (UNICEF Malawi, 2010). In 2012 about 5.2 million Malawians used unsatisfactory or shared latrines with 1.4 million having no latrines at all and defaecating in the open with the poorest 20% of the population 176 times more likely to practice open defecation than the wealthiest 20% of the population (Water and Sanitation Program, 2012). Kumwenda et al. (2014) put figure for basic sanitation at 60% and 8% practicing open defecation. Open defecation exposes the rest of the population to excreta related diseases like diarrhoeal and helminthic diseases. Most public places including schools and markets do not have adequate faecal disposal facilities putting all children, patrons and surrounding communities at risk of related illnesses (Kumwenda et al., 2014).

Faecal contamination of the environment is the root cause of an annual average of 2,500 cases of cholera affecting Malawi with cost of the necessary water, sanitation and hygiene (WASH) response estimated to be US\$1.6 million each year (Water and Sanitation Program, 2012). The diarrhoea prevalence in under-five children for Malawi stands at 17.5% (Kumwenda et al., 2014). As of 2012 poor sanitation cost Malawi 8.8 billion Malawi Kwacha each year, equivalent to US\$57 million, which translated to US\$3.8 per person per year or 1.1% of the national GDP (Water and Sanitation Program, 2012).

From the experience that provision of subsidies for construction of individual latrines alone does not necessarily translate into usage (Sanan and Moulik, 2007) Malawi adopted CLTS in 2008 as an approach to be used in sanitation promotion to implement the prohibition of open defaecation as stipulated in the National Sanitation Policy (Ministry of Agriculture, Irrigation and Water Development, 2011; Ministry of Irrigation and Water Development, 2006). CLTS was deemed to be an opportunity to scale up household latrine construction and use without a hardware subsidy, and to move Malawi to an open defecation-free environment (UNICEF Malawi, 2010). Using the CLTS approach World Vision is implementing a five (5) year project (running from 2011 to 2016) in Traditional Authority Nthondo in Ntchisi district in Central Malawi targeting a total of 363 villages with an estimated population of 34000 people. Latrine coverage for Ntchisi District for 2010 and 2011 ranged from 88.4% to 96.1% (National Statistical Office and ICF Macro, 2011; Ntchisi District Health Office, 2011, 2013). The coverage for drop holes covers could be inferred to be low as the absence of drop hole cover (which is the least likely to be available compared to slab, foot rests and sharing) is one of the criteria for classifying sanitation as basic/unimproved (Ministry of Irrigation and Water Development, 2006; National Statistical Office and ICF Macro, 2011). Levels of hand washing ranged from 6% to 17.3%. However, of the forty six (46) village which had been triggered almost two years into the project only 6 villages (13%) had attained open defecation free status (Ntchisi District Health Office, 2013). This study was therefore carried out from March to November 2013 in Nthondo Health Centre catchment area in Ntchisi District with the aim of exploring the reasons for the low attainment ODF status in the communities reached with CLTS. In the project and this study attainment of ODF means a household having a latrine with drop hole cover and hand washing facility with soap. The areas of focus for the study included knowledge of community members ODF related issues, socioeconomic factors affecting attainment of ODF and institutional arrangements in place to support CLTS.

MATERIALS AND METHODS

Study area

The study was conducted in Nthondo Health Centre catchment area in Traditional Authority Nthondo in Ntchisi District. The area is situated to the North East part of the district and borders with Nkhotakota District to the Northern part. The estimated population in the area at the time of the study was 34,442.

DATA COLLECTION AND ANALYSIS

Data was collected through household questionnaires, focus group discussions, key informant interviews, documentation review and observations to verify the ODF status of the households. A total of two hundred and two (202)

households (based on population of one thousand and (1120) households, confidence level of 95%, 5% error and a proportion of 80% using unimproved latrines) interviews targeting the household heads conducted. Focus group discussions were also conducted with a total of 20 women and 10 youth (14-17 years) to supplement the information collected from the heads of households. Key informant interviews and self-administered questionnaires were used to collect data from extension workers in the area whose composition was one Community Development Assistant, one Water Monitoring Assistant, one Assistant Environmental Health Officer and 20 Health Surveillance Assistants. Chi square tests were used to examine the relationship of the study variables with ODF status.

RESULTS AND DISCUSSION

Socioeconomic characteristics of respondents

Among the 202 household heads interviewed, 89.1% (180) were males while 10.9% (22) were females. The majority (69.8%) of household heads were aged between 26-50 years while those under 25 and over 50 years contributed 23.3% (47) and 7.9% (16) respectively. About 26.7% (54) of the household heads interviewed had never attended school, 63.4% (128) had undergone primary school and 9.9% (20) reached secondary education. The majority (58.4%) of the respondents have a family size of 3-6 people, followed by households having 7-10 people at 34.7% (70), 4% (8) having 2 people and 3% (6) having over ten people. The main source of income amongst the interviewed household heads was farming as 97.5% (197) of the respondents are farmers while the remaining 2.5% (5) were businessmen.

ODF status of the respondent households

Table 1 shows the coverage of the facilities required in CLTS. Based on ODF definition for this study it can be seen that 40.1% (81) of the respondent households were ODF. The ODF status figure, however, would have been on the high side (93.1%) if the Level 1-ODF definition were to be used. This is in line with the study by Tyndale-Biscoe et al. (2013) which established that depending on the definition of ODF status the level of maintaining the ODF status varied from 10% if all the criteria were used to 87% if functional latrine was the only criterion.

The study results showed that the coverage of latrines in the study area had not changed when compared to the coverage at the start of the project which ranged from 88.4% to 96.1% (National Statistical Office and ICF Macro, 2011; Ntchisi District Health Office, 2011, 2013). This could be attributed to the fact that triggering sessions did not achieve the desired behaviour change through disgust and shame amongst the community to collectively realize the implications of open defecation and need for collective local action to improve their sanitation situation.

The study results showed a considerable increase in the number of HWF (i.e. 6% to 17.3% to 66.8%) and drop hole covers (3.9% to 11.6% to 55.9%) in those households that had pit latrines. The sharp increase realized could be attributed to the basic understanding of the faecal oral route transmission among those who had latrines; low resource requirement (in terms of time and finances) acquire the facilities and follow ups (section 3.5). The study observed that much emphasis was not put on the hygiene software components such as importance of hand washing use of drop hole covers.

Table 1. Coverage of sanitation and hygiene facilities in the study area

Facility	Coverage
Latrines	93.1% (188)
Latrines with hand washing facility	66.8% (135)
Latrines with drop hole covers	55.9% (113)
Latrines with hand washing facilities with soap	47.5% (96)
Latrines with drop hole cover, hand washing facility with soap	40.1% (81)

Socioeconomic characteristics and ODF status

The study did not establish any association between ODF status and; age ($p=0.862$) and sex ($p=0.114$) of the household. Figure 1 shows the levels of education attained by respondents from both ODF and non-ODF households. No association was found between ODF status and level of education ($p=0.983$). Based on the Table 2 the study did not find any significant relationship between ODF status and annual household income ($p=0.557$).

This demonstrated that most of the households that owned latrines used locally available materials. This is in line with the principle of CLTS which emphasizes on the use of locally available resources and not external support in any form of subsidy.

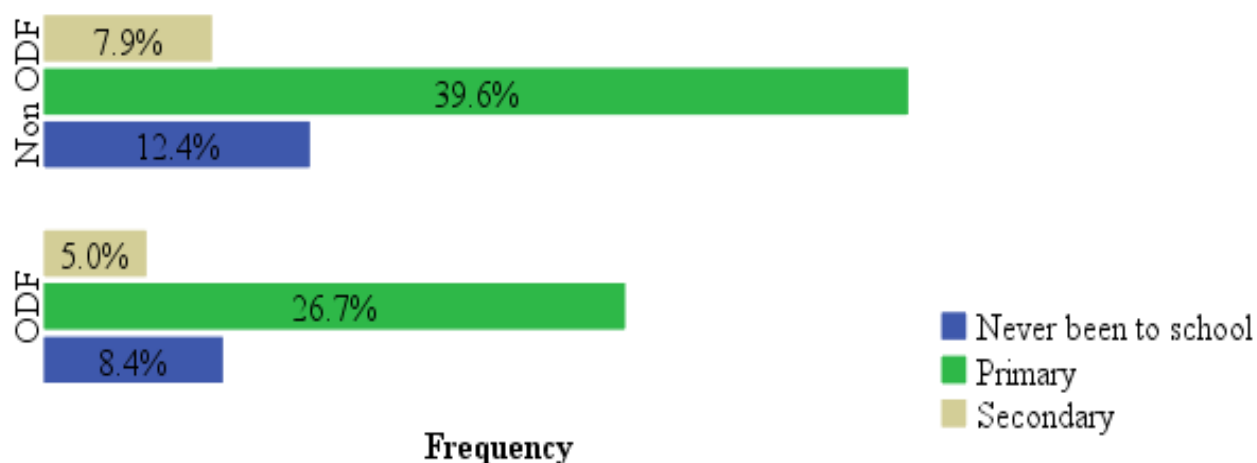


Figure 1. Level of education attained by the respondents

Table 2. Cross tabulation of ODF status and annual household income (in Malawi Kwacha)

	0.00 -30,000.00	30,000.01- 60,000.00	60,000.01- 90,000.00	90,000.01- 120,000.00	Above 120,000.00
ODF household	29 (40.8%)	21 (34.4%)	12 (48.0%)	13 (50.0%)	6 (31.6%)
Non ODF household	42 (59.2%)	40 (65.6%)	13 (52.0%)	13 (50.0%)	13 (68.4%)

Knowledge of respondents and ODF status

Knowledge on characteristics of an ODF household

Table 3 shows the knowledge of respondents on the characteristics of an ODF household.

There was no association between ODF status and knowledge of the characteristics of ODF household ($p=0.177$). This implies that the availability of the facilities in the community was not primarily driven by the desire to achieve ODF status based on knowledge and behaviour change arising from the CLTS approach.

Table 3. Knowledge of respondents of the characteristics of ODF household

Characteristics of ODF household	Proportion
Use latrine with drop hole cover and hand washing facility with soap	48.5% (98)
Use latrine without cover and hand washing facility with soap	19.3% (39)
Use latrine with cover and hand washing facility	16.3% (33)
Use latrine with cover only	10.9% (22)
Don't know any	5.0% (10)

Knowledge of benefits of not defaecating in the open

The advantages the respondents mentioned included good health, shame, clean environment, privacy, security, convenience and comfort. Figure 2 shows the levels of knowledge of the respondents on the benefits of not defaecating in the open.

The study did not find significant association between ODF status and knowledge of the benefits for not defaecating in the open ($p=0.348$). This implies that the triggering process did not generate the disgust and shame; as a result could not facilitate required behavioural change in the communities. The level of knowledge established in the study could be attributed to pre-CLTS health education approaches such as PHAST and primary school curriculum which failed to bring the desired behavioural change. Failure to bring about desired behavioural change in CLTS is most of the times attributed to weak facilitation during triggering sessions as CLTS requires that facilitation should be done by facilitator who is well conversant with the triggering process.

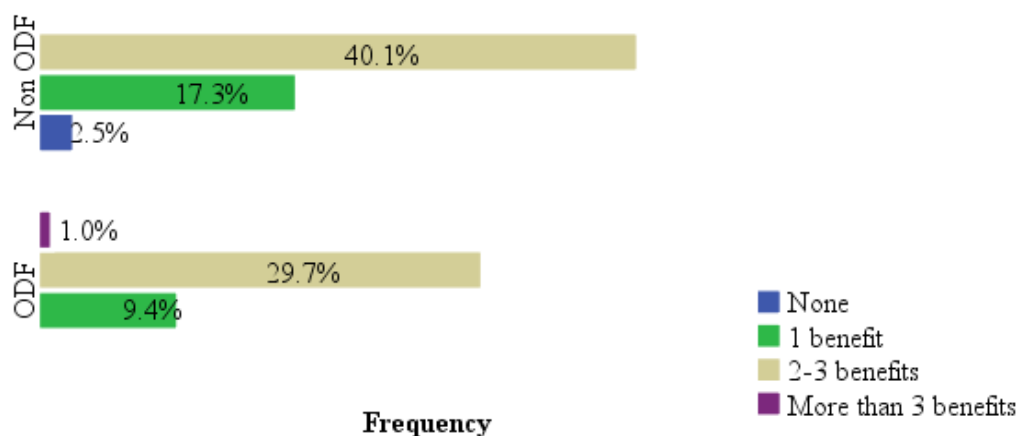


Figure 2. Knowledge on benefits of not defaecating in the open

Knowledge on transmission modes for open defecation related diseases

The modes of transmission of open defecation related diseases which the respondents were expected to mention included eating foods without hand washing, drinking water contaminated with faecal matter, eating foods contaminated with flies and coming into contact with contaminated water contaminated with faecal matter. Figure 3 presents the levels of knowledge of the respondents on the modes of transmission of open defaecation related diseases.

No association existed between ODF status and knowledge of modes of transmission of ODF related diseases ($p=0.241$). This implies that the triggering process did not make the community reach the point of changing behaviour through demonstration of the routes which illustrate the practice of feeding on each other's faeces. The knowledge displayed by the respondents could be attributed to the knowledge obtained from the pre-CLTS health education approach through the health and education systems in the country through approaches such as Participatory Hygiene and Sanitation Transformation (PHAST), Health Education and Sanitation Promotion (HESP) and Health Education subject in the primary school curriculum.

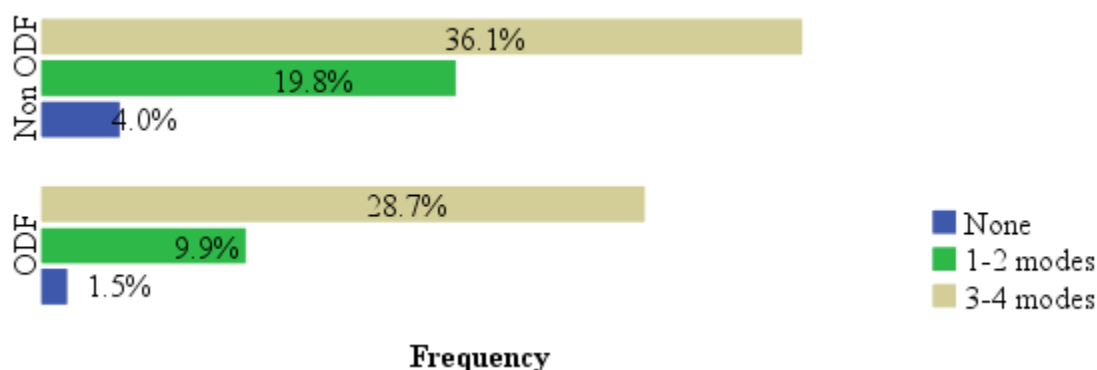


Figure 3. Respondents knowledge on transmission modes of open defaecation related diseases

Follow up/supervision and ODF status

Figure 4 shows the responses obtained on the frequency of follow ups post-triggering. Success of CLTS programme greatly depends on well planned follow ups after triggering process (Kar and Chambers, 2008; Tyndale-Bicsoe et al., 2013). The study noted an association between ODF status and number of follow up visits ($p=0.026$). This is similar to findings from a study in East Java which revealed that lack of follow ups was amongst the hindrances to collective behaviour change on open defecation (WSP, 2011). The follow ups were done by both the natural leaders and the extension workers (Health Surveillance Assistants, Assistant Environmental Health Officers and Water Monitoring Assistants) in the area. Through a check of follow up forms with the extension workers are 55% availability was established.

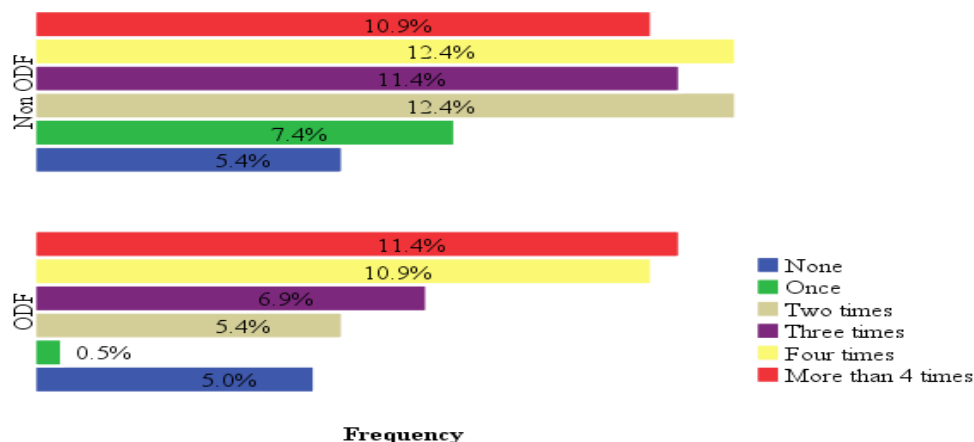


Figure 4. Post-triggering follow ups to the households

CONCLUSIONS

- i. The triggering process did not achieve the intended outcome of collective behaviour change in the community to take collective action.
- ii. Despite the failure for collective behaviour change and action within the community follow ups contributed significantly towards attainment of ODF status.

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