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**WATER, SANITATION AND HYGIENE:
SUSTAINABLE DEVELOPMENT AND MULTISECTORAL APPROACHES**

**Potential motivators behind household toilet adoption:
Results from a study in Amhara, Ethiopia**

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A study conducted in Amhara, Ethiopia among open defecators and toilet owners using female informants with children under 5 years of age to understand psychosocial factors that influence toilet uptake revealed that feeling modern, respected by members of community and visitors, and allowing women privacy any time of the day distinguishes facility owners from open defecators. In addition, toilet owners perceive that sanitation facilities contribute to keeping the compound clean and facilitate defecation for the elderly. Yet, feeling of shame for contaminating the environment, convenience, security and disease prevention were found to be the four common motivating factors for building toilets. Major reasons hindering latrines uptake were: land tenancy constraints or lack of space, or lack of skills in house to build facilities meaning the need to rely on outside help to construct latrines. Both contextual factors and psychosocial factors interact to influence latrine ownership. Sanitation promotion needs to keep these factors into account to help meet MDGs.

Introduction

To meet sanitation MDGs by 2015, hygiene promoters must use strategies to increase demand and use of toilets. There are different promotional strategies to increase demand. Kar (2003) and Kar and Bongartz (2006) have argued in favor of community based approaches that rely on collective pressure to conformity to reach total sanitation. Instead of providing subsidies to individual households, rewards are made available to communities that reach specific sanitation targets. Jenkins and Scott (2006) have favored a different approach and have explored both contextual and individual factors that lead households through a process of change under the assumption that the adoption of toilets may proceed in stages. In the Amhara Region in Ethiopia, the National Regional State Health Bureau (2008) has adopted a sanitation and hygiene strategy that incorporates some of the aspects of community led total sanitation to ignite change, but complements community mobilization activities similar to those suggested by Kar (2003) with individual household visits implemented by health education workers from the public sector to negotiate with family members which toilet may best suit the family needs and resources. The intent of this effort is to reduce, if not stop open defecation, helping families opt for toilets that meet minimum standards. This strategy assumes that a combination of community based and individual behavior approaches is more effective since in the end View metadata, citation and similar papers at [scopus.com](#) **households must decide what best suits their family needs. Even if collectively ignited, the adoption of sanitation facilities in a household matter. The strategy adopted by the Amhara Regional State Health Bureau is known as the Learning by Doing Initiative and it received technical and financial support from a partnership formed by the Water and Sanitation Program (WSP) and the USAID-funded Hygiene Improvement Project.**

As part of the baseline of the Learning by Doing Initiative and to inform the Amhara National Regional State Health Bureau of the role played by contextual and psychosocial factors in the adoption of sanitation facilities by households, the instrument to collect household baseline data included questions suggested by the Jenkins and Scott (2007) approach. These questions permitted an analysis of beliefs and attitudes that distinguish open defecators from owners of sanitation facilities. It also explored reasons offered by informants for having or not having sanitation facilities. Some of the analysis has been broken down the data

by intervention regions in order to determine if the factors that facilitate the adoption of toilets has been influenced by the Learning by Doing Initiative.

This paper offers some of the findings of the baseline research conducted and proposes some recommendations for the Regional Bureau's promotional strategy.

Methodology

2000 households were selected using a cluster sampling approach intended to detect at least 17% of households with toilets with a $\pm 5\%$ estimation error in three strata representing different level of program intensity (e.g., high, medium and low) referred to as high, direct and indirect involvement districts (*woredas*).

Twenty-two *woredas* were selected for the study: 4 were high involvement *woredas*, 7 were direct involvement *woredas* and 11 were indirect involvement *woredas*. The high involvement and the direct involvement *woredas* are located in the different administrative zones that make up the Amhara Region and had been selected by program implementers to become models and a training ground for other *woredas* in those zones. All high involvement and direct involvement *woredas* at the time of the baseline were included in the study. The indirect involvement *woredas* were selected at random to represent each one of the zones and were considered as paired staggered controls to high and direct involvement *woredas*.

This study was based on multi-stage sampling requiring to select *woredas*, *kebeles* (sub-districts), *gotts* (villages or groups of villages) within *kebeles*, and households within *gotts*. Once the specific *gott* to visit had been selected, a central location in the *gott* was identified, and a "bottle rotation technique" was employed to select the first household in the cluster. The first household where the neck of the bottle pointed was picked as the starting point and the five consecutive households to the right household also selected. Households were screened to determine if they had children under five years of age. The respondents in the household survey were adult female childcare takers. In the end, 745 households represented high involvement *woredas*, households represented direct involvement *woredas*, and households represented indirect involvement *woredas*.

Results

Respondents' attitudes and beliefs about latrine ownership

Respondents were asked to express their view using 4-point scale (i.e. I fully agree, I partially agree, do not want to give comment, and I fully disagree) for 16 items measuring attitudes and beliefs prepared to illicit responses on motivators behind toilet ownership. Through a cross-tabulation comparing open defecators vs. toilet owners, results showed that some perceived benefits of latrine use were shared by both sub-groups, such as privacy, ease of use and reduction of danger and disease. However, toilet owners obtained statistically significant higher scores than open defecators in the following items: feeling modern, respect by members of community and visitors, and allowing women privacy any time of the day. Also, toilet owners perceive toilets contribute to keeping the house compound clean and facilitate defecation for the elderly (Table 1).

Reasons for building a latrine

Latrine owners were asked to mention their reasons for building the latrine. Accordingly, feeling of shame for contaminating the environment (40.9%), convenience (27.4%), security (12.7%) and disease prevention (12.7%) were found to be the four common motivating factors for building toilets. Comfort, status and privacy as the main reasons for building toilets, were mentioned only by 11.7%, 5.9%, and 2.6% of the respondents respectively. For the most part, there were no statistical differences across sampling strata. The exception to this rule occurred in the case of justifying the installation of a latrine for security reasons, which is higher in the direct involvement strata compared to the other two (Table 2).

Beliefs	Practitioners of open defecation	Households with toilets	F	p value
Makes owners be modern	3.86	3.94	11.1	.00
Makes owners be respected members of their communities	3.90	3.95	8.4	.00
Makes owners be respected by visitors that come to their house	3.91	3.98	14.1	.00
Makes owners popular	3.76	3.85	7.2	.00
Makes family members proud	3.83	3.89	5.2	.02
Allows women to have privacy any time of the day	3.93	3.96	2.1	.01
Helps keep the family compound clean	3.93	3.97	5.2	.02
Does not help to reduces the number of flies in the house	1.80	1.79	0.05	.81
Allows you to defecate easily when you are sick	3.89	3.92	1.1	.29
Allows you to defecate easily when you are old	3.90	3.94	5.3	.02
Reduces the possibility of disease in your family	3.89	3.92	2.7	.10
Gives latrine users more privacy	3.90	3.91	0.6	.43
It is a nuisance to go to the latrine all the time to defecate	1.36	1.27	4.5	.03
Avoids the dangers that could be faced while defecating in the bush at night	3.88	3.92	2.3	.12
It requires a lot of effort to maintain an operational latrine	3.66	3.64	0.3	.53

Reasons for not building a latrine

Households without sanitation facilities were asked to mention their major reasons for not constructing the latrines. Multiple responses were possible. The reasons behind the obstacles are mainly associated with no skills or no land. In order of frequency, the obstacles were: absence of a person in the household who is capable to building latrine (17.4%), not owning land that can be used to build a latrine (12.2%), physical and economical obstacles (11.7%), shortage of land that can be used to build a latrine (11.3%), other priorities in the household (10.3%), not having the skill to build a latrine (9.1%), no expert mason in the area (4.3%) and cost (4.3%) were the major reasons mentioned by the respondents for not constructing and using latrines (Table 3).

We explored the reasons why latrines have not been built by open defecators dissatisfied with their defecation practices. An analysis was done breaking down open defecators into two sub-groups: those not intending to change their sanitary conditions in the 12 months following the survey, and those intending to do so within that time frame. Reasons preventing open defecators not intending to change their sanitary conditions to build a latrine include the following: lack of land/not owning land ($\chi^2=21.9$, $P=.000$) and inadequate space to build latrine ($\chi^2=7.62$, $P=.02$). On the flip side, reasons more frequently mentioned by those that intend to change their sanitary situation include: having other priorities in the household (χ^2 , 13.22, $P=.000$) and cost (χ^2 , 12.67, $P=.000$). It would seem that the reasons among the non-intenders to not

built latrines are structural. However, the reasons among intenders to explain why latrines have not been built yet are contextual or temporary.

Specific indicators / variables	Level of involvement			Total	χ^2 / One way ANOVA	p
	High	Direct	Indirect			
No. & % of households that installed latrine for status	15	15	13	43	.19	.9
	6.4%	5.7%	5.5%	5.9%		
No. & % of households that installed latrine for comfort	25	35	25	85	1.1	.56
	10.7%	13.4%	10.7%	11.7%		
No. & % of households that installed latrine for convenience	75	62	63	200	5.5	.23
	32.2%	23.7%	26.8%	27.4%		
No. & % of households that installed latrine for privacy	8	8	3	19	2.4	.29
	3.4%	3.1%	1.3%	2.6%		
No. & % of households that installed latrine for security	30	24	39	93	6.1	.04
	12.9%	9.2%	16.6%	12.7%		
No. & % of households that installed latrine for disease prevention	30	24	39	93	7.4	.11
	12.9%	9.2%	16.6%	12.7%		
No. & % of households that installed latrine for not sharing with others	5	10	6	21	1.3	.50
	2.1%	3.8%	2.6%	2.9%		
No. & % of households that installed latrine for shame of environmental contamination	84	112	101	297	4.9	.29
	35.9	42.6	42.8	40.9		

Reasons for not building latrine	Level of involvement			Total	χ^2 / One way ANOVA	P-value
	High	Direct	Indirect			
Not owning land	42	60	53	155	19.1	.00
	8.2%	18.6%	12.2%	12.2%		
Shortage of land that can be used for latrine construction	59	36	49	144	.043	.97
	11.6%	11.1%	11.3%	11.4%		
Land situation (loose soil)	27	14	12	53	3.7	.15
	5.3%	4.3%	2.8%	4.2%		
Lack of construction materials	23	17	24	64	.55	.75
	4.5%	5.2%	5.5%	5.1%		

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Absence of expertise (mason) in the area	14	18	22	54	4.9	.08
	2.7%	5.6%	5.1%	4.3%		
Absence of a person in the household that can construct the latrine	86	50	85	221	2.4	29
	16.9%	15.5%	19.6%	17.5%		
High construction cost	27	15	11	53	4.6	.09
	5.3%	4.6%	2.5%	4.2%		
Lack of skill on how to construct the latrine	40	25	51	116	5.4	.06
	7.8%	7.7%	11.8%	9.2%		
Difficulty in getting permission from authorities	0	2	2	4	2.8	.24
	0.0%	0.6%	0.5%	0.3%		
Other priorities	47	40	43	130	2.14	.34
	9.2%	12.3%	10.0%	10.3%		
New to the area	14	13	13	40	1.1	.57
	2.7%	4.0%	3.0%	3.2%		
Carelessness	16	10	10	36	.67	.71
	3.1%	3.1%	2.3%	2.8%		
Ready to dig	5	0	12	17	11.6	.00
	1.0%	0.0%	2.8%	1.3%		
Lack of time	38	17	17	72	5.5	.06
	7.4%	5.2%	3.9%	5.7%		
Tried but failed as the land was too hard (stony) to dig the pit	19	12	19	50	.34	.84
	3.7%	3.7%	4.4%	3.9%		
Not comfortable to use latrines	19	5	7	31	5.8	.05
	3.7%	1.5%	1.6%	2.4%		
Lack of adequate information	37	18	25	80	1.2	.53
	7.2%	5.6%	5.8%	6.3%		
Problems related to physical and economic capacity to construct latrines	58	46	44	148	3.0	.22
	11.4%	14.2%	10.2%	11.7%		
Others	35	19	51	105	9.9	.00
	7.8%	6.8%	13.1%	9.4%		

Conclusions

Both contextual factors and psychosocial factors interact to influence latrine ownership. Sanitation promotion needs to keep these factors into account to help meet MDGs.

Since respondents in this study were female caretakers of children under 5 years of age, future similar studies need to include male respondents since decisions about latrine construction are made by men, even though their spouses may participate in the process.

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