

Factors Influencing Latrine Coverage among the Maasai of Ildamat Location Kajiado District

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Abstract

The purpose of this study was to establish the demographic, social cultural, economic, environmental and policy factors influencing latrine coverage among the population of Ildamat location, Central Division, Kajiado District. The study units were heads of households aged 18-64 years. The study used systematic sampling method with a sample size of 150 households and used both quantitative and qualitative methods. Overall sanitation coverage was 28.7%. Factors influencing sanitation coverage included male gender and higher socio-economic status. While environmental factors were not statistically significant, qualitative data pointed to rocky ground as a barrier to latrine coverage. The knowledge of laws related to sanitation was significant though there were no statistical significance between role played by public health department and latrine provision despite clear gaps in public health personnel. There is need for all stakeholders to work together to improve latrine coverage in the area. At policy level the study recommends recruitment of more public health staff, creation of programs and projects that will increase family income hence a source of economic empowerment hence investment in household sanitation.

Keywords: sanitation, latrine coverage, Kajiado, public health

1. Introduction

The Kenya National Environmental Sanitation and Hygiene Policy 2007 indicates that in 2004, only 59% of the world population had access to any type of improved sanitation. 80% of these live in rural areas (WHO, 2000). Large populations are obliged to defecate in the open or use unsanitary facilities with a serious exposure to sanitation-related diseases. The regions presenting the lowest latrine coverage are Sub-Saharan Africa (37%), Southern Asia (38%) and Eastern Asia (45%). Western Asia (84%) has the highest coverage among developing regions and out of every three persons unserved, two live in Southern Asia or East Asia (National Environment Sanitation and Hygiene Policy, 2007). In sub Saharan Africa latrine coverage is low in some countries like Botswana, where rural latrine coverage is 41% according to 1991 census (Tiameno et al, 1997).

Improvement in household sanitation is best achieved through provision and regular use of a well-maintained sanitation facility. Studies have shown that latrine coverage has to reach up to 90% of a population to have a positive impact on community health (Ikin, 1994). This is contrary to the situation in Ildamat location where sanitation is a major challenge. In Kajiado District only 28% of the population has access to sanitation (Ministry of Public Health and Sanitation 2008). However, this coverage still remains far below the national figure of 85.2% and provincial figure of 78.4%.

As a result of this low household sanitation coverage diarrhea and worm infestation remain among the top five leading causes of morbidity in the area (District development plan 2008-2012). Kajiado District Health Records indicates that in 2006, 12.8% of people were diagnosed with diarrhoea, 9.7% in 2007 and 6.7% from January – July 2008. Out of the above cases, 0.7% cases in 2007 and 1.2% in January – July 2008 were from Ildamat location (Kajiado MOH Records, 2008). This study sought to investigate the factors that influence latrine coverage among the population of Ildamat location.

2. Methodology

2.1 Study Area

The study was conducted in Ildamat location Kajiado District. The total population is 5218 and 896 house-holds spread in 3 sub-locations: Olkiloriiti with 1862, Esokota has 1094 and Oloiyanalani has 2264 people.

2.2 Study Population

The study population included adult men and women aged 18-64 years. This is because this is the definition of an adult in the Kenyan constitution.

2.3 Study Design and Sampling procedure

This was a descriptive cross-sectional study that used qualitative and quantitative methodologies. Qualitative data was collected through focus group discussion guide; key informants were interviewed with the help of a key informant guide. Quantitative data was generated through a household survey using an interviewer schedule as a data collection tool. Fischer's formula was used to determine the minimum sample size at 120 individuals. This number was adjusted to 150 due to potential non-response. Purposive sampling was used to select respondents for the study. The systematic sampling method was used to determine the number of households in every sub location

and to determine the interval from one household to another the starting point in every sub-location was determined by tossing a pen and movement was according to the direction pointed.

2.4 Data collection

Questionnaires were used to enable quality quantitative data. Focus group discussion guide and key informant interview guide (KII) and observation checklist were used to generate qualitative data. Key Informant Interviews

KII were used to enable quality qualitative data. Key informant interviews with 3 assistant chiefs were conducted in each of the 3 selected sub-locations. Other key informants were the District Public health officer, Red-cross representative and a nursing officer in Oloiyangalani dispensary and the area Chief giving a total of 7 Key Informants. KIIs were organized into themes which included demographic, social cultural, economic environmental and policy factors influencing latrine coverage.

Focus group discussion was used to generate qualitative data. It was organized into themes, sub-themes and probes. Probing was done by the key researcher. There was an observer and note taker for each focus group discussion. FGDs were conducted with 3 women groups, 3 men groups. The criterion for selection was one FGD for each of the selected categories per sub location. There were 12 discussants per group giving a total of 72 discussants who were chosen by help of area assistant chiefs based on age, and gender. Pocket voting was used in determining contentious issues like hand washing after visiting the toilet.

Structured questionnaires were used to interview house-hold heads and were written in English translated to Maasai then back to English to ensure accuracy. The researcher employed knowledgeable persons who are fluent in English and Maasai languages to undertake the translations.

2.5 Data analysis

Data was first processed through cleaning of the questionnaire manually through counter checking for completeness and correctness. The questionnaires were then coded for easy entry. A screen in the SPSS version 17.0 was designed to start the process of entry. First level of analysis (Descriptive statistical analysis) was done which included frequencies, means, modes, medians. The descriptive findings were presented in form of tables and pie charts. Significant tests were carried out using Chi-square. The qualitative data was analyzed manually and compared with the quantitative data.

2.6 Ethical Considerations

Clearance to carry out the research was obtained from Great Lakes University of Kisumu. Authority to enter the community was sought from Local Administration that is District commissioner, District Officer, Chief and Local Sub-Chiefs and Headmen. Anonymity was strictly observed so as not to infringe on the rights of the respondents by using codes instead of names. Confidentiality was highly maintained and study participants were assured of the same. Participation into the study was made voluntary and no one would be denied services for failure to participate in the study. A consent form was developed and used during data collection and it included the Purpose of study and benefits of the study to informants and the community at large.

3. Results

3.1 Demographic Characteristics of Respondents

There were total of 150 respondents who were interviewed. There were 109 females and 41 males. Majority of respondents were within the age bracket 18-30 and least were 60 and above. The demographic characteristics of respondents are summarized in Table 1.

3.2 Latrine Coverage

The data showed that the latrine coverage in the study area was 29%. Pearson's Chi-square flagged various factors that were associated with latrine coverage, at the $p < 0.05$ level, as shown in Table 2. There was significant association between latrine coverage and area of residence ($\chi^2 = 14.45$, $p = 0.01$), increased Education ($\chi^2 = 34.37$, $p < 0.001$) and the Gender of Respondents. ($\chi^2 = 8.62$, $p = 0.003$). On the other hand, there were no significant associations between latrine coverage and age ($\chi^2 = 1.169$, $p = 0.761$), Religious Affiliation ($\chi^2 = 1.932$, $p = 0.587$), Vegetation Cover ($\chi^2 = 5.68$, $p = 0.128$) and Ethnicity ($\chi^2 = 0.815$, $p = 0.665$).

The study indicated that majority of the respondents who had no form of education had no latrines (87.9%) while comparatively those who had tertiary education had more latrines (81.8%). As far as gender roles are concerned, the study established that majority of men (59.3%) had the role of latrine construction and (20%) in maintenance and 5.3% in planning. In the case of women (78%) are involved in cleanliness, while the minority (4.7%) are involved in construction. The results indicate that there is correlation between role of men in latrine provision and presence of latrine, $\chi^2 = 22.48$, $p < 0.001$. Indeed, during focus group discussions with both men and women groups it was stated that latrine provision is entirely the role of men since they are the key decision makers and property owners in form of livestock. One woman discussant from Oloiyangalani sub-location was quoted

saying *“Toilets need money and money is in the hands of men, they too have the strength to construct”*. The role of women was majorly cleanliness.

Majority of respondents who had livestock less than 20 did not have latrines (78.2%) while on the other hand those who had more than 20 livestock had more latrines (47.5%). The results indicate that there was significant association between number of livestock herds and presence of latrine, $\chi^2=9.461$, $p=0.002$.

While results indicate that there was no significant association between environmental factors and presence of latrine, $\chi^2=0.23$, $p=0.632$, majority of respondents (56.7%) pointed out rocky soils as the major environmental factor affecting latrine construction while 29.3% were not aware of any environmental factors hindering latrine construction in their areas. According to FGDs, the residents of Olkiloriiti pointed out that the rocky ground was a hindering factor to latrine construction. This was further confirmed by KII by the chief of Ildamat who hails from Olkiloriiti who pointed out that rocky soils up to 4 feet deep coupled with poor road transport network as hindering factors to latrine construction.

3.3 Community Attitudes and Perception around Latrines

The study established in all the FGD sessions that there were cultural values regarding latrine provision in the community. One of the male discussants aged 50 years from Oloiyangalani said the following. *“We Maasai’s have a strong culture that we cannot construct a” house” for feces*. Another was quoted saying *“we grew up and found our fore fathers using the bush for defecation so we too grew up using the bush”* This was confirmed by KII with area chief quote *“People do not have latrines here especially the ones aged 60 years and above are not used to construction of latrines. If they construct they don’t use because they are not used to. It is their way of life.”*

The study also established that it is culturally unacceptable for an adult to be seen by a child going to defecate.

3.3.1 Perceptions

The study established in all FGDs that a Maasai cannot handle excreta especially doing odd jobs of cleaning latrines. This was confirmed by KII by the area chief *“Maasais cannot clean toilets it is like a taboo. You cannot even get a wife or husband if it is known that you are employed to clean latrines. Even in my household I have to command my wife to clean the toilet.”*

3.3.2 Attitudes

The study established through FGD sessions that majority of discussants have a negative attitude towards excreta and pointed that latrines smell. One of the female discussant between ages 50-55 from Esokota was quoted *“we cannot use latrine because it smells. It is better we to go the bush because it is fresh”* It was further established that sharing of latrines with children is a big issue. One male discussant from Olkiloriiti was quoted saying *“when I am around the home my children cannot go to the toilet they had better go to the bush”*

3.3.3 Ignorance

Ignorance was also a factor contributing to low latrine coverage contributing to 20.6% of the responses. This was supported by FGD data which indicated that latrine provision was not a felt need despite the high knowledge of health effects of open defecation.

One woman 45 years from Esokota with a strong motivation of constructing a latrine as the discussions continued was quoted saying *“These men, even if you ask them to construct a latrine for you they just assume and ignore, they say it is not a priority, we can organize ourselves and find ways of constructing latrines ourselves. Personally, I’m going to look for ways of constructing my own latrine.”*

4. Discussion

The study established that the latrine coverage in Ildamat as 28.7%. According to Surgen (2006) sustainable excreta disposal is achieved when the community is maintaining latrine coverage at 100% without external support and when latrines are consistently used by all members of family. The latrine coverage in Ildamat is below the national benchmark of 90% and there are disparities in interventions in hygiene knowledge which all contribute to low latrine coverage.

Kenya integrated Household survey 2005/2006, indicates Kenya’s latrine coverage as 85.2%. Rift Valley Province where Ildamat is found has coverage of 74.8% (Ministry of Medical services, 2008). According to National Environment and Sanitation Policy of (2007) by the year 2015, as contribution to attaining MDGs the government set to ensure all households are made aware of improved sanitation and hygiene practices for improved health and that 90% of households will have access to a hygienic affordable and sustainable toilet facility. The house hold latrine coverage in Ildamat is quite low compared to national and regional figures. There is need for partnerships in intensification of community sensitization to raise latrine coverage in the area.

There was a coverage range in different sub-locations with Esokota having the highest coverage followed by Oloiyangalani then Olkiloriiti. The chi- square test indicated that there was a strong relationship between presence of latrine and area of residence. This was further confirmed why disparity in the three areas and it was confirmed that Majority had also received some training from Red-Cross which had carried out some latrine

promotion activities in both Esokota and Oloi yangalani. Red- cross had offered only trainings in Esokota but provided latrine donations of latrine slabs (substructure) in Oloi yangalani but interestingly the community had not collected them for use in latrine construction and the slabs had been lying at the chiefs residence for the past two years.

These conflicts with in depth discussion with discussants of Oloi yangalani indicated that the community felt that the material used for construction of the slabs were weak and as a result felt were dangerous and people felt they may collapse and people would fall inside. This was confirmed by Red-cross representative who pointed out similar concerns. No latrine intervention had been carried out by any organization in Olokiloriirti area but FGDs with both men and women group indicated rocky ground as the main hindering factor to latrine construction in the area. This concurs with a study by Water Aid in Ethiopia (2003) which found out that uptake of latrines fell in two categories, those related to attitudes and perceptions and those related to design and construction. Those related to design and construction included various factors affecting local and individual preferences related to design and construction.

The study found out that majority of respondents were women 72.2%. There was an association between sex of respondents and latrine coverage, Majority of male respondents had higher latrine coverage than females. This concurs with a study by Apollo (2006) which found out that priorities for sanitation are mainly set by men and recommended that women should have a greater priority for sanitation as they have greater need for privacy.

The study findings indicate that the presence of latrine is very significant to the knowledge of laws related to sanitation, chi-square test value=12.842, $p < 0.001$. Majority of respondents knew laws related to sanitation (58%) and most of them particularly knew it was against the law to contaminate the environment with faecal matter. This indicates that there is a gap between knowledge and practices which has an influence on latrine coverage. This concurs with a study was carried out by Hussainy (2007) in Lahore Pakistan which found out that that knowledge alone does not determine practices. General mobilization should therefore be encouraged which range from group meetings, exhibitions, street dramas, and TV. This can be attributed to the fact that the key law enforcers who are the ministry of public health and sanitation do not enforce the law at house hold level and this is challenged further by lack of enough officers to work in the area. This was confirmed by the nursing Officer Oloi yangalani dispensary who confirmed that the last time a public health official was posted in the location was back in 1994 and since then no one addresses sanitation and other public health concerns in the area.

Key informant interview with DPHO Kajiado indicate that no Government subsidies are put in place and no budgetary allocations by the government were available to aid in promotion of sanitation coverage despite the ministry's objective in the performance appraisal of its staff to raise latrine coverage by 10% by end of the financial year. This is therefore related to the low latrine coverage in the area. This contradicts findings of (Myels e. al 2003) which recommend an effective policy programme of economic measures which include subsidies in cash or kind to communities and house - holds to establishing recommended types of sanitation facilities and points out budgetary allocations as key in meeting this objective.

5. Conclusion

The study concluded that the overall latrine coverage in the study area was quite low Further, there is a gap between knowledge and practices which has an influence on latrine coverage. Latrine laws on household sanitation are never enforced by relevant authorities and behaviour change communication is not conducted partly due to lack of budgetary allocations and inadequate staff.

Based on the findings, various recommendations are made. There is need to create projects and programs that will increase family income hence a source of economic empowerment. This will help households to invest in sanitation. The government department responsible for gender, NGOs and donors should embark on awareness raising programs targeted at sanitation policy makers which emphasize that sanitation is not a household or social issue but rather a development problem and should be linked with poverty alleviation. Construction of latrines needs money and therefore there is need for latrine subsidies either in cash or kind for the extremely poor and vulnerable who cannot be able to afford to construct latrines. The Government should pool resources and have budgetary allocations geared towards promotion of sanitation by emphasizing on economic benefit of latrines. The Government should recruit more public health staff in the area to address the gaps at community level. Further, all stakeholders including NGOs, Government, and community at large should form a partnership and collaborate to work towards upgrading latrine coverage in the area in line with Kenya National Sanitation and Hygiene Policy of 2007. Lastly, there is need for intensification of community sensitization by development partners using mechanisms which area simple for the community to understand due to the low literacy rates like Participatory Hygiene and sanitation transformation PHAST and Community Led Total Sanitation (CLTS) which have proven effective in similar contexts. Further research is needed on the operation and maintenance of latrines as this has not been adequately addressed as attitude of smell strongly came out especially for women this is recommended to look in to latrine designs which are more hygienic.

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Table 1. Socio-Demographic Characteristics of Respondents

Characteristic	Category	Frequency (n)	Percent (%)
Gender	Male	41	27.3
	Female	109	72.7
Age	18 – 30 years	59	39.3
	31 – 42 years	50	33.3
	43 – 60 years	28	18.7
	61+ years	13	8.7
Marital Status	Single	10	6.7
	Married	131	87.9
	Widow/Widower	8	5.4
Household Size	Less than 5 members	98	65.3
	5 members or more	52	34.7
Religion	Catholic	9	6.0
	Protestant	141	87.3
	Muslim	1	0.7
	Traditional/ Indigenous	9	6.0
Ethnicity	Maasai	148	98.7
	Kikuyu	1	0.7
	Other Tribes	1	0.7
Level of Education	None	65	43.3
	Primary	52	34.7
	Secondary	22	14.7
	Tertiary	11	7.3
Source of Income	Formal employment	30	20.0
	Self-employment	13	8.7
	Business	19	12.7
	Cattle keeping	88	58.7
Monthly Expenditure	Ksh 1000-3000	21	14.0
	Ksh 3000-6000	27	18.0
	Ksh 6000-9000	49	32.7
	Ksh 9000-12000	41	27.3
	Ksh >12000	12	8.0
Distance to Nearest Neighbor	0 – 100m	21	14.0
	101 – 200m	47	31.3
	>200m	82	54.7
Vegetation Cover	Bushy/shrubs	51	34.0
	Open grassland	55	36.7
	Trees/forest	41	27.3
	Other covers	3	2.0

Table 2. Factors Associated with Latrine Coverage

Characteristic	Category	Latrine Present		Chi-Square	
		Yes n (%)	No n (%)	χ^2	p-value
Gender	Male	19 (46.3)	22 (53.7)	8.62	0.003**
	Female	24 (22.0)	85 (78.0)		
Marital Status	Single	5 (45.5)	6 (54.5)	4.74	0.094
	Married	38 (29.0)	93 (71.0)		
	Widow/Widower	0	8 (100)		
Household Size	Less than 5 members	24 (24.5)	74 (75.5)	2.41	0.12
	5 members or more	19 (36.5)	33 (63.5)		
Ethnicity	Yes	1 (33.3)	2 (66.7)	0.03	0.86
	No	42 (28.6)	105 (71.4)		
Source of Income	Formal employment	17 (56.7)	13 (43.3)	18.00	<0.001**
	Self-employment	5 (38.5)	8 (61.5)		
	Business	6 (31.6)	13 (68.4)		
	Cattle keeping	15 (17.0)	73 (83.0)		
Monthly Expenditure	Ksh 1000-3000	3 (14.3)	18 (85.7)	13.32	0.01*
	Ksh 3000-6000	4 (14.8)	23 (85.2)		
	Ksh 6000-9000	12 (24.5)	37 (75.5)		
	Ksh 9000-12000	20 (48.8)	24.5 (51.2)		
	Ksh >12000	4 (33.3)	8 (66.7)		
Knowledge of Sanitation Laws	Yes	35 (39.8)	53 (60.2)	12.84	<0.001**
	No	8 (12.9)	54 (87.1)		