

Access to, and Utilization of Information on Sanitation and Hygiene by Rural Households in Alaba Special District, Southern Ethiopia

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ABSTRACT The main objective of this study was assessing the level of sanitation and hygiene information and identifying factors that determine its access and utilization by rural households in Alaba District, Southern Ethiopia. The study generated the required data from 162 respondents selected from four rural 'kebeles'/villages using multistage sampling technique. Both qualitative and quantitative data were collected, and then the data were analyzed using descriptive statistics and Ordered Logit Model. The analysis revealed that rural households in the study area have limited access to sanitation and hygiene information. Taking selected indicators of sanitation and hygiene: once in a week basis, 3.1% of the respondents accessed the messages on hand washing which is followed by safe excreta disposal (1.9%), safe water collection and storage (1.2%), food hygiene (0.6%), household waste disposal (0.6%) and disease causing vectors (0%). With regard to utilization of the accessed information, safe excreta disposal accounts for (57.4%), hand washing (26.5%), safe water collection and storage (16%), disease causing vectors (9.3%), food hygiene (4.3%), and household waste disposal (3.1%). The Ordered Logit regression result indicated that educational status of the respondent, health extension worker contact, information seeking behavior and perception of the respondent were found to be significant determinants of access to sanitation and hygiene information among rural households in the study area. Regarding sanitation and hygiene information utilization, the analysis of Ordered Logit showed that educational status of the respondent, contact with health extension worker and knowledge level significantly affect the utilization decision of sanitation and hygiene information accessed by rural households. The overall findings of the study underlined the importance of communication and behavioral factors in the areas of sanitation and hygiene information access and level of utilization. Therefore, policy and health interventions should give emphasis to improvement of information sources, which can address the rural households and more focuses should be given to adult education and behavioral change communication approaches.

1. BACKGROUND

In most developing countries, especially in Sub-Saharan Africa (SSA), the basic causes of more than 80% of the diseases are inadequate and unsafe water supply, and improper disposal of waste. Ethiopia is among the poorest countries in the world, ranking 170 out of 177 in the UN human development index and is the second most populous country in Africa (population estimated at 73 million). Yet, Ethiopia's rural populations are among the least served with rural water supply and sanitation access at only 24% and 8% respectively (ADF 2005).

Various government departments and non-governmental organizations (NGOs) have started focusing at financing programs that were aimed at the development of water schemes and other health interventions. However, such programs paid insufficient attention to Sanitation and Hygiene (S and H). Consequently, improvements in S and H lagged behind. For instance, Ethiopia registered less than 1% increment in sanitation coverage per annum over a consider-

able period of time. To draw attention to the problems of S and H, the UN, in its millennium development goals (MDG), set a target that centered on improving sanitation. One of the seventh (target ten) of the MDGs was to halve the proportion of people without access to improved drinking water and sanitation (Worku 2008).

To remain healthy, human beings need adequate and year-round supply of good-quality water. Many debilitating or even fatal illnesses are spread by contaminated water supply with human faecal matter containing disease-causing viruses, bacteria, and parasites. Unfortunately, over one-third of the world's population, nearly 2.5 billion people have inadequate access to sanitation, and over one billion people do not have access to enough safe water. These conditions, combined with poor hygiene, are largely responsible for 50 percent of the world's population suffering from debilitating diarrheal diseases. Of those affected, 3 million die each year. Overall, polluted water affects the health of 1.2 billion people every year and contributes to the death of 15 million children under five

every year. Vector borne diseases, such as malaria, kill another 1.5 to 2.7 million people per year, with inadequate water management being a key cause of such diseases (UNEP 2000).

In Africa alone, over 300 million people lack either sanitation or adequate water, and frequently both. Disease and mortality are not the only consequences of polluted and scarce water. Less attention is paid to the fact that women and children bear the brunt of dirty water and water shortages. Children are more likely to become ill, and women have to look after them. Women and girls carry out most water collection, and many spend long hours doing so. Time spent collecting water can be spent in more productive activities, such as food production, farm activities and household chores; thus, it results in opportunity cost that tells on the economic factors of the households.

Ethiopia, being a country with high proportion of illiteracy and insufficient mass media exposure, obviously faces the problem of lack of access to information for the rural population. However, the grass root level network of health education expansion efforts by the governments and NGOs paves the way for access to information regarding sanitation and hygiene at least to a limited level. Yet, the inherent limitations of the women folk influenced by their workload and culture are stumbling blocks on the way to information access. Only a clear understanding of this aspect will throw limelight on the magnitude of the issue enabling serious consideration for redefining and streamlining the strategies.

Access to and utilization of information on improved ways of living is a prerequisite for modernization process of any human being, as 'information is power'. It helps the individual to be more rational, increases the decision making abilities and also improves the standards of life. It is, therefore, a process of self-empowerment.

Denial of access to information curtails the chance of utilization of information; that in turn curtails self-empowerment. This is why communication and information flow is considered to be the main agenda in the development strategies of the third world presently.

2. The Problem

Since 2002, the SNNPR government, one of the 9 regional states, and 2 city administrations

of Ethiopia, devised a new approach of broad based, low cost, high impact public health interventions aimed at improving basic health status of the region, including access to sanitation and hygiene services. The implementation of the approach had some weaker aspects. The cross-sectoral collaboration adopted by the BoH- communication and promotion of Sanitation and Hygiene message through political officials, which was widely used in the beginning of implementation (in the period from 2003-2005), was not effective in improving access to Sanitation and Hygiene facilities.

The overall policy implementation focused on simply increasing the number of latrines constructed without assessing the utilization and the change in S and H behavior of households. It means that the quota system for Sanitation and Hygiene targets, introduced in order to create accountability, resulted in diverting attention away from change in sanitation and hygiene behaviors. It, eventually, has failed to give technical support.

Alaba is one of the eight special *woredas* in the SNNPR, which has been affected by recurrent drought. As a result, the nutrition situation is becoming increasingly alarming. Simply providing sufficient water and sanitation facilities will not, on its own, ensure their optimal use or impact on public health. In order to achieve the maximum benefit from an intervention, it is imperative to ensure that people have the necessary information, knowledge and understanding to prevent water and sanitation related disease, and have the capabilities to mobilize their involvement in the design and maintenance of those facilities.

Data from the Health Office of the *woreda* indicates that there is shortage of well-trained individuals to address these problems. Lack of material resources further contributes to the poor S and H situation in *Alaba* Special Woreda. Among the top 10 diseases that frequently occur in the *woreda* are: intestinal parasite; dermal infections; dysentery; gastroenteritis; and amoebae. These are directly related to the existing situation of a lack of clean and adequate water supply and poor hygienic practices and environmental sanitation in the study area.

Despite various efforts by governmental departments and non-governmental organizations on the development of water schemes and improving sanitation facilities; there is still a criti-

cal information gap to change the attitude, knowledge and practice of the rural households to understand the severe consequence of poor sanitation and hygienic practice. This is one of the research gaps worth studying.

3. Conceptual Framework of the Study

The issue of sanitation and hygiene in health aspect of each individual is very much valuable and its linkage with overall development aspects through the productivity of individual is quite a lot. Providing sufficient water and sanitation facilities will not, on its own, ensure their optimal use or avoid their impact on public health. In order to achieve the maximum benefit from an intervention, it is imperative to ensure that people have the necessary information, knowledge and understanding to prevent water and sanitation related disease. It is equally vital that they have the capabilities to mobilize their involvement in the design and maintenance of those facilities. The level of access to available information and usage of the accessed information is assumed to be determined by different factors. The conceptual framework of this study was developed based on the literatures and the personal observation of the study area. The assumption is that access to and utilization of sanitation and information is influenced by several interlinked factors that include demographic and personal, economic, socio-cultural, behavioral, situational and communication factors. As

clearly illustrated in Figure 1, the mentioned factors were assumed to affect access to and utilization of sanitation and hygiene information by rural households was taken into consideration. The conceptual framework highlighting the relationship of explanatory variables with the dependent variables is summarized below.

3. METHODOLOGY

3.1. Description of the Study Area

Alaba woreda is located 315 km south of Addis Ababa and about 85 km south-west of the Southern Nations Nationalities and Peoples Regional (SNNPR) state capital, Awassa. The woreda is geographically located 7°17' N latitude and 38°06' E longitude. It is located west of Oromia region, north of Hadiya (Sike), east of Kembata Tembaro, south-east of Silte and Hadiya zones (Fig. 2). It is a special district and has a special status where the administration directly reports to the regional state. There are 79 rural kebeles/villages and 3 sub-cities in the woreda. Alaba Kulito, the capital of the woreda, is believed to have been founded towards the end of the 20th century.

According to the 2007 Central Statistical Agency (CSA 2007) report, the total population in the rural kebeles of the woreda is 205,301. Out of these, 103,288 are male and 102,103 are female. The total woreda population is 232,241 out of which 117,236 are male and 115,005 are

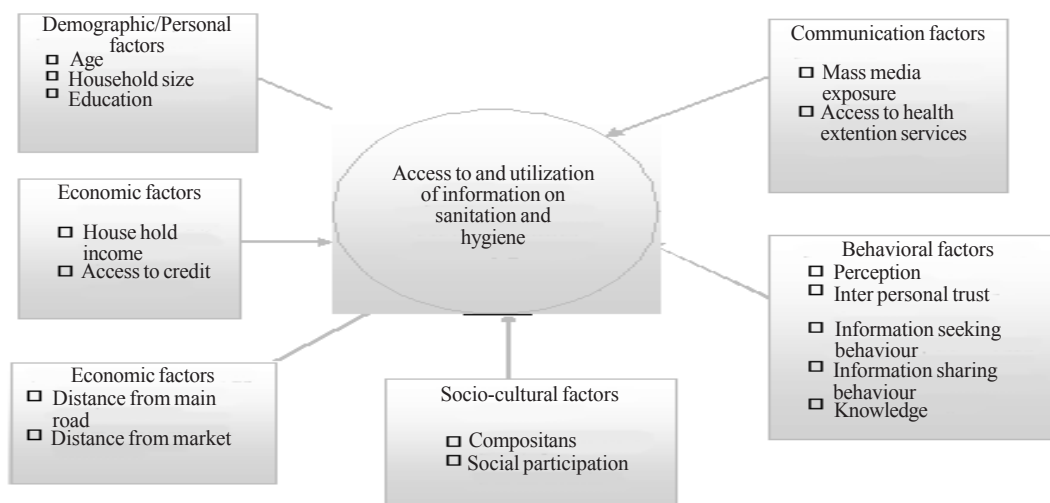


Fig. 1. Conceptual frame work of the study

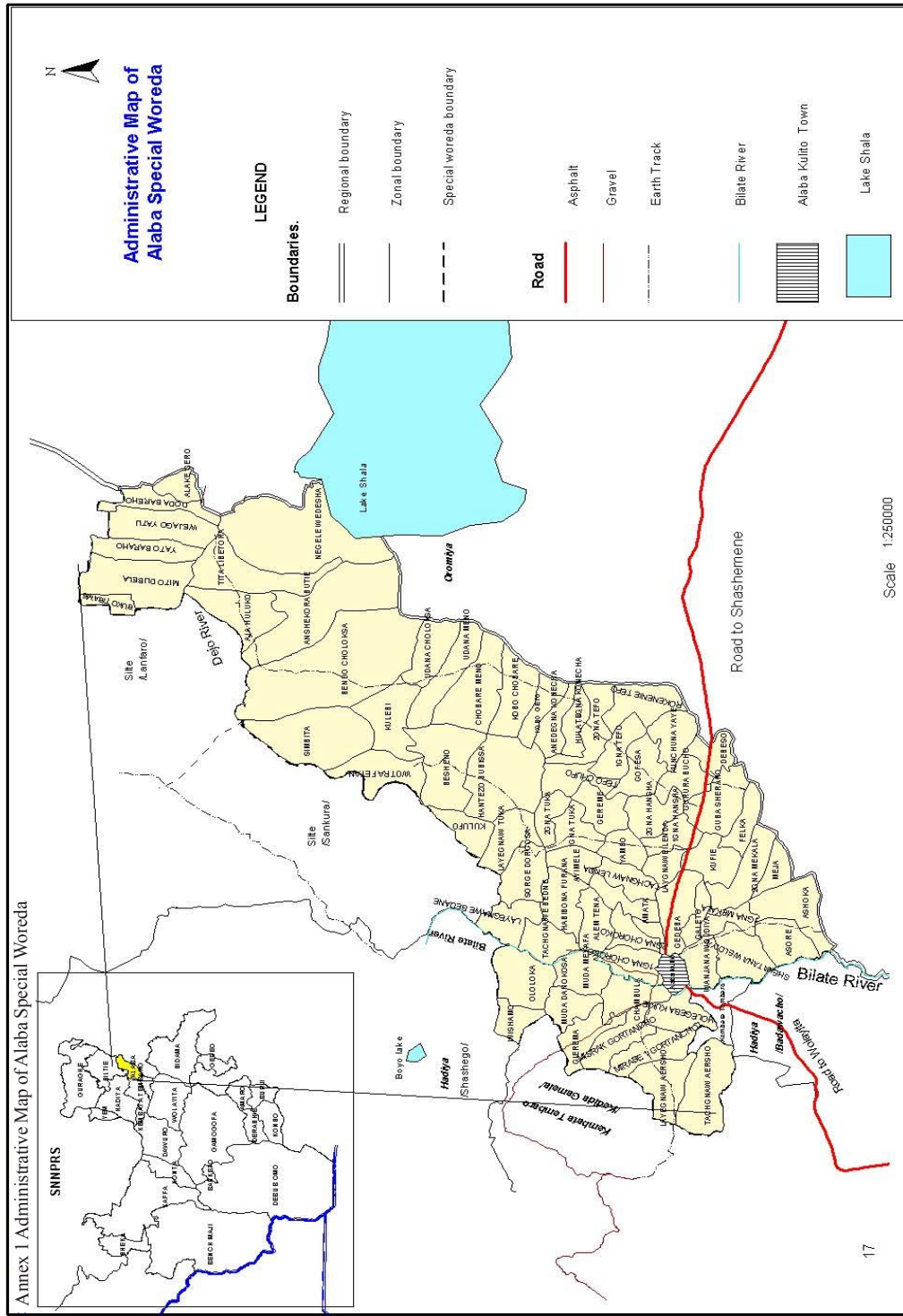


Fig. 2. Location of the study area (Alaba special woreda)

female. Ethnically, there are about 6 major groups in the woreda, but Alaba and Gurage ethnic groups are the dominant groups constituting about 81 and 10 percent of the total population, respectively.

The altitude of the woreda ranges from 1554 to 2149 m.a.s.l, but most of the areas in the woreda are found at about 1800 m.a.s.l. Except for few hills, the woreda has topographically suitable land for agriculture. In addition to the recurrent drought, flood has also been a major problem in the area. The latter is induced as a result of dominant low level topography. Rainfall has been a major limiting factor in agricultural production in the area. As a result, it is one of the woredas in SNNPR where drought is observed and recurrently affecting many households.

Regarding the agro-ecology of the area, 86% is Woina Dega (or moderate to cool sub-humid-mid-altitude) and 14% mainly Kolla (Low land). The mean annual rainfall ranges between 759 and 1,241mm; the monthly mean temperature is between 6.7°C and 13.8°C (AW-WRDO 2007). The area receives a bimodal rainfall where the small rain falls are between March and April while the main rains are from July to September. Although, the reliability of the small rains is low, farmers in the area cultivate haricot bean in both rainy seasons. However, during the main rains, all crops grown in the area are planted including maize, teff, wheat, pepper, haricot bean, sorghum and millet. Rainfall during the main rains is erratic that most of the time crops fail due to uneven distribution of rainfall over the growing period. That is the reason why the woreda faces crop failure almost every 3 years.

The number of FTCs in the woreda is 32 and the total numbers of development agents (DA) who are regular workers are 183. According to the information obtained from woreda health offices; a total of 72 health posts, 8 health centers and 1 middle level health center are found.

3.2 Data Sources

The study employed a cross-sectional study which incorporated quantitative as well as qualitative nature. The data for this study were generated from both the primary and secondary sources. As to the primary source, information was collected through the use of interview schedule and focus group discussions. Secondary, data

were also gathered through reviewing relevant materials such as statistical reports, books, journals, bulletins, magazines, web sites, and unpublished thesis. The primary data was gathered from rural households in *Alaba* special woreda.

3.3 Sample Size Determination and Sampling Technique

In order to ensure the generalizability of the findings to larger population, the study was considered adequate sample respondents for selection through appropriate techniques. The sample size of this study was determined by taking the following assumptions:

P = Expected proportion of population in the study area who have access to information on water hygiene and sanitation = 75 %,

Q = Expected proportion of population in the study area who have no access to water = 25 %,

$Z_{\alpha/2}$ = 95% confidence level corresponds to the value 1.96

e = proportion of sampling error tolerated at 0.07 (to increase the accuracy)

Frank and Kosecoff (1995:62) have presented the following formula to determine the sample size:

$$N = (Z/e)^2 (P) (1 - P)$$

Accordingly, the sample size (N) of the study is calculated as follows,

$$N = \frac{(1.96)^2 \times 0.75 \times 0.25}{(0.07)^2} = 147 + 14.7 = 162$$

For the purpose of this study, one of the most commonly used probability sampling technique, multistage sampling technique, was used to select the sample respondents. In the beginning of the sampling, *Alaba* special woreda was purposively selected because of the fact that the area is well known for its less access to safe water, poor sanitation and hygiene. And also, the selection was based on different organizations report which was done in different times about frequent occurrence of water related disease in the area.

In the first stage of sampling, the total 78 kebeles (PAs) of the woreda were stratified into two group based on distance from the main town Kulu. Kebeles, which are far from main town by 30 km, were in the first group and kebeles which are found less than 30 km from the town were also in the second category.

In the second stage of sampling, from the

first groups (far kebeles) 2 kebeles were selected and from the second groups (near kebeles) 2 kebeles were selected by simple random sampling technique. Thirdly, probability proportional sampling (PPS) technique was used to select a total of 162 households from each kebele. Lastly, from selected households the list of FHH and the MHH households was taken from kebele administration and stratified based on the list. The sample included 20% FHH from total household and the rest was MHH household (Fig. 3).

Data Collection

In order to produce a complete set of data for analysis and meet the stated objectives, a number of data collection instruments were used. These include, interview schedules for sampled households (Quantitative); Interview schedules for different KII (Key Informants Interview); Checklists for Focus Group Discussions (FGD). A total of five enumerators who spoke the local language and who were familiar with the study area were recruited and trained on the objectives, method of data collection and interviewing techniques. During the fieldwork, all efforts were made to maintain data quality through intensive field editing and supervision.

With regards to the collection of qualitative data, the focused group discussions were conducted in each selected PAs and men and women

participated separately. The maximum number of participants in each group was 7-10: a group that comprises health extension worker, elders, religious leaders, opinion leaders, and knowledgeable individuals were included in the group interview. This helped to extract information about the contribution of information accessibility and utilization on sanitation and hygiene and to find out what constraints were facing access and utilization of information by the rural households.

3.5 Data Processing and Analysis

Data collected from the survey respondents was entered in to computer for analysis using Statistical Packages for Social Science (SPSS) software. Following this, the data were edited, coded, and cleaned. The study employed both univariate (percentage analysis) and multivariate, ordered logit model. (see the detail of the model in section 4.3)

4. RESULTS AND DISCUSSION

4.1. Background Information and Characteristics of Respondents

Descriptive statistical analysis indicated that most of the respondents (99.4%) are followers of Islamic religion. Regarding the ethnic origin, 99.4% belong to *Alaba* ethnic group. The

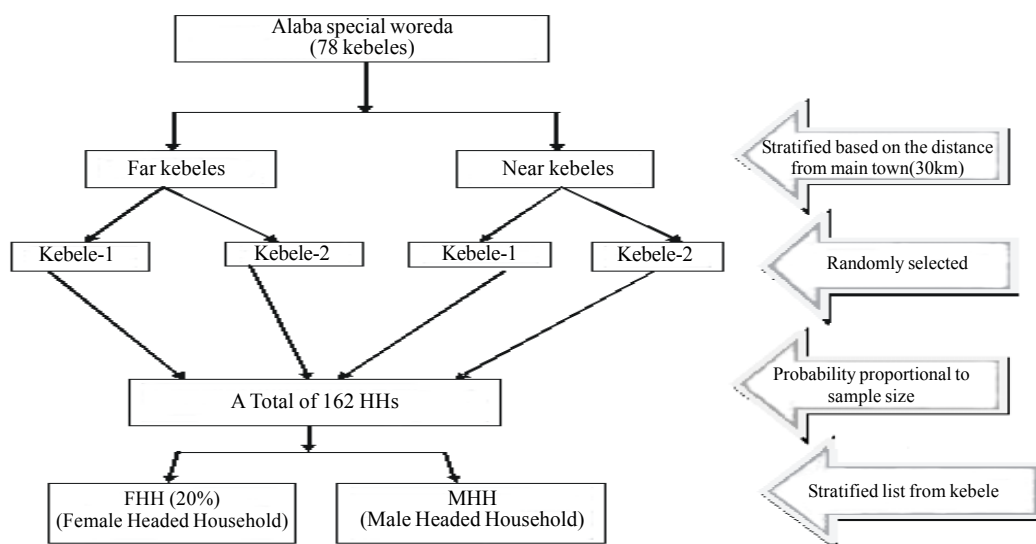


Fig. 3. Schematic presentation of the sampling design

other 0.6% and 3.1% were from *Selti* and *Kembata* ethnic groups respectively. Data pertaining to the housing condition of the sampled households were collected by observing the type of roof from which the houses were constructed. The obtained data generated four categories of housing conditions, namely grass roof in a good condition, grass roof not in a good condition, iron roof house and houses in other conditions. Accordingly, 74.7%, 19.8%, 3.7% and 1.9% of the total respondents were in these categories, respectively. (See Tables 1 and 2).

Table 1: Percentage distribution of respondents by selected individual characteristics

Variables	No. of respondents	Percentage
<i>Household Head</i>		
Father	117	72.2
Mother	45	27.8
<i>Education Status</i>		
Literate	44	27.2
Illiterate	118	72.8
<i>Marital Status</i>		
Married	115	71.0
Single	2	1.2
Divorce	8	4.9
Widowed	37	22.8
<i>Age of Respondents</i>		
15-24	5	3.1
25-50	144	88.9
50-64	11	6.8
>64	2	1.2
<i>Religion</i>		
Muslim	161	99.4
Christian	1	0.6
<i>Ethnicity</i>		
Alaba	156	96.3
Silti	1	0.6
Kemabata	5	3.1

Source: Field survey data 2010

4.2. Measuring Access to and Utilization of Sanitation and Hygiene Information

The frequency of receiving different information about sanitation and hygiene was considered to measure the respondents' access to information. According to the Federal Ministry of Health (FMOH), health sector strategic plan (HSDP-III), health service extension program include sixteen packages in four main areas. Hygiene and environmental sanitation is one of the four main areas. The services have been planned to provide adequate information services in seven areas namely: proper and safe excreta disposal, proper and safe solid and liquid waste management, water supply safety

measures, food hygiene and safety measure, healthy home environment, arthropods and rodent control and personal hygiene.

Table 2: Percentage distribution of respondents by reported household characteristics

Variables	No. of respondents	Percentage
<i>Access to Credit</i>		
yes	41	25.3
No	121	74.7
<i>Annual Income of HH</i>		
180-230	3	1.9
230-600	9	5.6
600-1500	27	16.7
1500-3500	78	48.1
3500-5000	28	17.3
>5000	17	10.5
<i>Household Size</i>		
0-3	18	11.1
4-7	114	70.4
7-10	25	15.4
>10	5	3.1
<i>Housing Condition</i>		
Grass roofed in good condition	121	74.7
Grass roofed not in good condition	32	19.8
Iron roofed	6	3.7
others	3	1.9

Source: Field survey data 2010

Accordingly, these areas of sanitation and hygiene information were analyzed vis-à-vis the dependent variables, i.e. access to sanitation and hygiene information by the rural households. A total of six information areas were considered to measure the frequency of access sanitation and hygiene information. Following the method used by Ethiopian Demographic Health Survey Report (EDHS 2005), data related to access to health information from different sources was extracted by asking the respondents how often they are exposed to sources. Ethiopian Demographic Health Survey Report revealed that when an individual is exposed to sources once in a week, he/she will have more than 75% information access (knowledge) of the in-coming information. In this study the frequency of receiving information was measured in five categories, i.e. once in a week, once in a month, once in three month, once in six month and never. Accordingly, scores of >75%, 50-74%, 25-49%, 1-24% and 0% score was given respectively.

The descriptive statistics result indicated that the actual access score of sanitation and hygiene information among rural household ranges between 4.17 and 75 with mean 44.26 and stan-

standard deviation 16.17. The study result showed that there was no one who never accessed sanitation and hygiene information at all. Based on results, respondents were categorized in to four groups, namely, High, Medium, Low and Very Low (Table 3).

Table 3: Distribution of respondents by information access and utilization category

D.V	Category	No.	Percentage	Score
Access	High	9	5.6	>75
	Medium	65	40.1	50-74
	Low	66	40.7	25-49
	Very low	22	13.6	1-24
	Total	162	100	1-100
Utilization	High	15	9.3	>75
	Medium	96	59.3	50-74
	Low	42	25.9	25-49
	Very low	9	5.6	1-24
	Total	162	100	1-100

Source: Field survey data 2010

The same procedure was followed to examine the level of information utilization on sanitation and hygiene by the rural households. Based on the operational definition of sanitation and hygiene information utilization, the frequency of using accessible information was considered. As it was discussed above, no household was out of sanitation and hygiene information access even if the degree of access differs. To collect data as to the utilization level of the respondent households, detail points under six information areas were included i.e. frequency of washing hand with in four critical times, frequency of latrine usage, and frequency of waste disposal and so on.

The respondent categories were identified based on the sum of frequencies of utilization from their accessible sanitation and hygiene information and the measurement scale was developed on the continuum of never= 0, sometimes=1, mostly=2, and always=3. Finally, a respondent's household was categorized into high utilization (75-100), medium utilization (50-74), low utilization (25-54) and very low utilization (1-24) level. The descriptive statistics result indicated that the actual utilization score of sanitation and hygiene information among the rural household ranges between 6.82 and 85.23 with mean 56.97 and standard deviation 16.0. The respondents' distribution in the access and utilization categories is presented in Table 3.

4.3 Multivariate Analysis

4.3.1 The Ordered Logit Model

Descriptive statistics involves arranging, summarizing and presenting a set of data in such a way that the meaningful essentials of data can be extended and grasped easily. Descriptive statistical tools were employed for the description of different demographic/personal, socio-cultural, economic, behavioral, communication and situational characteristics of the sample respondents and descriptive statistical tools including mean, percentage, standard deviation and frequency. In view of examining the relative importance of independent variables, ordered logit model was used.

Ordered Logistic regression estimates the probability of a certain event occurring and helps to see further the effect of each independent variable on the dependent variable. The dependent variable access can be ranked in to three based on the level and frequency of contact with information sources so that the ordinal logistic model is appropriate for ranked responses (Low, Medium and High). The general formula of ordered model is

$$\tilde{y} = \sum_{k=1}^K \beta_k x_k + e$$

$\tilde{y}$ = unobserved and can be thought of as the underlying tendency of an observed phenomena.

e = is disturbance term assumed to follow a certain symmetric distribution with zero mean such as nominal or logistic distribution. What do we observe is

$$y = 1 \text{ if } \tilde{y} \leq \mu_1$$

$$y = 2 \text{ if } \mu_1 < \tilde{y} \leq \mu_2$$

$$y = 3 \text{ if } \mu_2 < \tilde{y} \leq \mu_3$$

$$y = j \text{ if } \mu_{j-1} < \tilde{y}$$

Where y is observed in j number of ordered categories, μ are unknown threshold parameters separating the adjacent categories to be estimated with β s. the general form for the probability that the observed y falls to category j and the μ s and the β s are used to estimate.

Firstly, it presents the output of the ordered logit model with regard to various demographic, socio-cultural, and economic, communication, behavioral and situational factors influencing the dependent variable sanitation and hygiene information access and utilization by rural households. Secondly, it comes up with the discussion on the results of the econometric model.

4.3.2 Interpretation of the Model Output of Information Access

A total of 10 explanatory variables were included in the econometric model analysis and out of which four explanatory variables were found to significantly influence sanitation and hygiene information access and intensity of the information access. These variables included health extension workers contact, perception of the respondent and education status of the household head, and information seeking behavior of the respondent (Table 4). The model output results for each explanatory variable for the access of sanitation and hygiene information presented as follow:

Table 4: Maximum likelihood estimates of the ordered logit model for information access

Variables	Estima- ted coef- ficient	SE	Wald statis- tics	Sig. level	Odds Ratio Exp(B)
EHH	1.644	0.475	11.977	0.001	2.789
TRUST	0.819	0.746	1.204	0.272	2.268
INFSHAR	0.398	0.751	0.281	0.596	1.488
HEW	0.754	0.232	10.523	0.001	4.233
KNOW	1.182	0.411	8.252	0.004	3.260
INFSEEK	0.542	0.339	2.557	0.110	2.225
SOCPRIT	-0.518	0.597	0.752	0.386	1.160
PERCTN	0.938	0.513	3.349	0.067	8.645
MASMED	0.345	0.211	2.662	0.103	1.411

-2log likelihood 287.921

Chi-square 96.705

df 9

sig 0.000

Pearson χ^2 value 244.724**

R² = 0.514

Source: Field survey data 2010

Education Level of Household Head (EHH):

The variable was significant at less than five percent significance level (<5%) and positively related with sanitation and hygiene information access among rural households in the study area. This implies that being illiterate and literate make a significant difference in accessing available sanitation and hygiene information. The model result indicated that all other things being kept constant, the odds ratio in favor of showing interest to accessing sanitation and hygiene information increases by a factor of 2.789 for literate respondents.

The possible elaboration for this is that education helps the literate household head to access the information from different sources than illiterate household head. This might be prob-

ably because as education level of the respondents increases, their understanding of the information also increases, and this paves the way to apply in practice the accessible information.

Access to Health Extension Services (HEW):

The model output result reveals that the variable was statistically significant at less than 1 percent level (<1%) and positively related with sanitation and hygiene information access. The model result confirms that households who had more contact with health extension workers have more access to health extension services and more access to sanitation and hygiene related messages than households who didn't contact health extension workers.

According to the model output, the odds ratio is in favor of interest to accessing sanitation and hygiene information increase by the factor of 4.233 for households who had contact with health extension services than who didn't have; holding other factors constant. As it was clarified in the focus group discussion, both in far and near kebeles health extension workers are the major information sources for rural households. In addition, they confirmed that almost all households construct their own latrine based on the information they get from health extension workers and the households who properly construct latrine has been graduated turn by turn. This is also a good motivational factor for those households who haven't constructed latrine.

Information Seeking Behavior (INFSEEK):

The ordinal logit model result indicates that the individual wish and need of getting information on different areas of sanitation and hygiene information has significant and positive influence on accessing sanitation and hygiene information at less than 5% significant level. All other things being held constant, the odds ratio is in favor of interest to increase access to sanitation and hygiene information by the factor of 2.225. This result is in agreement with the hypothesis of the study. It implies that individuals who mostly articulate their information needs, seek, evaluate and select have accessed sanitation and hygiene information more than individuals who don't have such behavior.

Perception of the Individual (PERSPTN):

The ordinal logit model result confirmed that the individual way of perceiving the coming message and giving meaning for it was significant and positively related with accessing the available sanitation and hygiene information at

less than 1% significant level. The odds ratio is in favor of interest to increase access to sanitation and hygiene information when the independent variable increases one unit, the odds that the dependent = 1 increase by a factor of 8.645, when other variables are controlled.

4.3.3 Interpretation of the Model Output of Information Utilization

Explanatory variables included in this category are educational level of the respondent, mass media exposure, contact to health extension worker(s), distance from market, perception, knowledge, social participation, interpersonal trust, information sharing and information seeking behavior (Table 5).

Table 5: The maximum likelihood estimates of the ordered logit model for information utilization

Variables	Estimated coefficient	SE	Wald statistics	Sig. level	Odds Ratio Exp(B)
EHH	1.702	0.481	12.795	0.000	5.484
TRUST	0.652	0.754	0.747	0.387	1.919
INFDISS	0.517	0.757	0.466	0.495	1.676
HEW	0.874	0.243	12.890	0.000	2.396
KNOW	1.251	0.417	9.015	0.003	3.493
INFSEEK	0.617	0.343	3.240	0.072	1.853
PARTIC-PTE	-0.610	0.600	1.033	0.309	1.840
PERCP-TIN	0.913	0.514	3.160	0.075	2.491
MASS-EXPO	0.237	0.221	1.146	0.284	1.267
HHIN-COM	-0.303	0.184	2.696	0.101	1.353

-2Log Likelihood 363.833

chi-square 124.561

df 10

sig. 0.000

Pearson χ^2 value 793.422***

R² = 0.594

Source: Field survey data 2010

Education Level of Household Head (EHH):

The ordinal model output reveals that the education level of the household head is significant and positively related with sanitation and hygiene information utilization of the individual at less than 1% significant level. All other things being held constant, the odds ratio is in favor of interest to increase the utilization of sanitation and hygiene information by the factor of 5.484. One of the possible reasons for this relation is that as the individual education levels increase, the ability to obtain information, process, un-

derstanding and the consequent utilization of sanitation and hygiene information also increases.

The study conducted by Asres (2005) clearly showed that people can form sound opinions and make good decisions through conscious use of communication or information, and this ability would be fostered by formal or informal education. Therefore, her studies are in agreement with the findings of this paper.

Access to Health Extension Services (HEW):

As confirmed by ordered logit model result, the variables have significant and positive correlation with sanitation and hygiene information utilization at less than 1% significant level. The individual decision to use the accessed information is mattered by the frequency of contact with health extension workers and the follow-ups of the workers. Those individuals who have contact with health extension agents to obtain health extension services found to be more users as compared to those who have no contact.

As it is presented in the table, the odds ratio of reaching decision to use sanitation and hygiene information increases by a factor of 2.396 for those individuals who have contact with health extension agent and receiving extension services; holding other factors constant.

Knowledge on Sanitation and Hygiene Components (KNOW):

The ordinal model output result indicated that, the variables have significant and positive relationship with sanitation and hygiene information usage at less than 5% significant level. All other things being held constant, the odds ratio increases usage of sanitation and hygiene information by the factor of 3.493. The findings of Korra (2009) also confirms the influence of knowledge on the access and utilization of information.

5. CONCLUSION AND RECOMMENDATIONS

The study was carried out to assess the level of sanitation and hygiene information access and utilization and to identify factors that influence these behaviours. The information areas included to identify access and utilization were safe excreta disposal, household waste management system, safe water collection and storage, food hygiene and control of disease born vectors. Difference (variation) among the sample respondents was identified through the use of

theoretically known factors that influence the access to and utilization of sanitation and hygiene information among rural households.

A total of twelve (12) explanatory variables were included in the ordinal logit model to identify their relative influence on access to sanitation and hygiene information by rural households. Out of those, four explanatory variables were found to be significant for sanitation and hygiene information access by rural households. These are education status of the respondent, access to health extension services, information seeking behavior and perception of the individuals. On the other hand, to identify factors that influences sanitation and hygiene information utilization a total of ten (10) explanatory variables were included in the model and out of this only three (3) of them had showed significant influence on information utilization. These are education status of the respondent, access to health extension services and knowledge had significant influence on individual decision to utilize sanitation and hygiene information.

It was observed that the sanitation and hygiene information access and utilization by rural households in the study area is not satisfactory according to the EDHS definition where the majority of the respondents were found under the categories of low and medium information access and information utilization category (i.e counts of 65 and 66 for access and 42 and 96 for utilization respectively).

- Both access to and utilization of sanitation and hygiene information was found to be significantly affected by education status. As literacy is widely acknowledged as benefiting the individuals and the society and is associated with a number of positive outcomes for overall health, the concerned local authorities should capitalize on informal or adult education.
- Access to health extension services is found to have significant relationship with sanitation and hygiene information access. The households who had most frequent contacts had better access to sanitation and hygiene information and utilized more the accessed information than who did not have. This calls for concerted efforts of the local government in assigning appropriate number of health extension workers in the rural areas, serious follow-ups on the frequency of visits and quality of information transferred.

- The willingness of individuals to share the available information increases the likelihood of information access. Therefore, it is recommended that the health extension workers or other responsible bodies should understand the individual behavior and related issues; especially if the existing social systems encourage information sharing, there should be appropriate intervention approach to use this informal system.
- According to the study finding, respondents who have a positive perception on the relative health risks have better access to sanitation and hygiene than those who have negative perception. Also, the prior knowledge of the individual on issues pertaining to sanitation and hygiene information matters more in the decision of using the information. In line with this, the result of the study showed that the knowledgeable respondents are more likely to utilize sanitation and hygiene information than the persons who lack prior knowledge regarding sanitation and hygiene. Therefore, it is recommended that promoting health behaviors through health education and other components need important attention from local government, especially considering the local language in the plan and strategy of information delivery.

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