BANGLADESH RURAL WATER SUPPLY AND ENVIRONMENTAL SANITATION PROGRAMME

SOCIO-ECONOMIC STUDIES

Water Use and Sanitation Habits

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WATER USE AND SANITATION HABITS

An in-depth study of Water and Sanitation related behaviour patterns in two villages and one slum area in Bangladesh

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PROLOGUE

This study was originally intended as an in-depth study paying more attention to the qualitative aspects of village life related to water and sanitation. It has been difficult to find the right balance between a qualitative and a quantitative presentation of the data collected.

A number of relevant cases have been presented in this report which will be useful for the socio-economic studies (SES) as work materials in combination with various other studies which have been undertaken with respect to preparing new strategies for the water and sanitation programme.

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IN-DEPTH STUDY

1. Introduction

1.1 Objective of the Study

This is an in-depth study in selected villages and an urban slum in Bangladesh. The study attempts to discover actual practices, attitudes and socio-cultural values influencing water use and sanitation practices in rural areas and urban slums. It also aims at discovering knowledge of villagers and urban slum dwellers about water related diseases. The ultimate objective is to set up an experimental health education project integrated with the water and sanitation programme. This experiment shall be based on the findings from the studies referred to as in-depth studies.

1.1.1 Immediate Objective

To determine how the power structure relate to accessibility to and use of hand tubewells.

To determine how women evaluate the location of the hand tubewells in their area, and to compare the actual location with the 'ideal' one if the women had been given a direct vote in the planning.

To determine defecation practice with special reference to women and children in the absence of a latrine.

To determine whether rules govern children's defecation practice and when such rules are imparted.

To find out which aspects of privacy are more emphasized in relation to defecation practices.

To determine how religious and customary values affect the siting of the latrine, as well as defecation practice in general.

To determine willingness to undertake emptying of pit (where this is available).

To determine sex differences in latrine use and defecation practice and what causes these differences.

To determine what promotes good health and to find out people's values about diseases and treatment.

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1.1.2 Special Points for Consideration

Distance to water sources for selected households.

Time spent for fetching water to the home. Who are the drawers?

Factors affecting choice of water. Would the households consider bathing at the tubewell instead of in the traditional source?

Would the households consider doing laundry at the tubewell instead of in the traditional source?

Do the households have higher priorities than water?

Any complaints about present latrine use?

Sharing of latrine with neighbour or relatives.

Maintaining the latrine - by whom?

When do children begin using the latrine - if it is available?

Use of traditional and modern doctors.

2. Methodology

2.1 Scope and coverage of the Study

To meet the objectives of this in-depth study socio-anthropological method was followed on the basis of stratified sampling procedure. For in-depth analysis participation-observation method had been supplemented to the in-depth sample survey with a structured questionnaire.

Two areas had been selected - two villages in Tangail district and one slum area in Mymensingh district. The main criteria taken into consideration for the selection of the areas were as follows:

- Study area must be reasonably big consisting of approximately 150 - 200 households;
- Must be inhabited by different socio-economic groups of various occupational background;

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- Must be inhabited by both Muslims and Hindus;
- Must have water and sanitation problems; and
- Must not have been the target for any health education programme.

Originally, the study area in Tangail included only one village named Indra Belta. But later on, another village named Char Rakshmit Belta was added because the census of Indra Belta indicated that the majority of the households had the occupation which were related with non-farming activities. The urban slum selected in Mymensingh district was named by Shaheb Ali Bastee.

2.2 Village/Slum Census

An uptodate census of the study areas was required in order to prepare a sampling frame. With a view to achieve that, a simple census questionnaire (I) was administered in the areas which included mainly age, sex, education, income, occupation, religion, family size, water supply and sanitation aspects.

Three field investigators (female), one in the slum area and two in the village areas, carried out the census count through the canvass technique. This census count took one week of time. The investigators also drew sketches of the areas showing the boundary of the villages/slum and indicating the distribution of the settlements, crop-fields, roads, ponds, canals, tubewells, school, shops and market, bush, culvert, latrine etc.

The census count yielded a total of 205 households - 105 in Indra Belta and 100 in Char Rakshmit Belta, in the village area, and 117 households in Shaheb Ali Bastee in the slum area. Of 105 households in Indra Belta, 95 households were Muslims and 10 households were Hindus, and of 100 households in Char Rakshmit Belta, 92 were Muslims and 8 were Hindus. Of 117 households in Shaheb Ali Bastee, 88 were Muslims, 27 were Hindus and 2 were Christians.

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2.3 In-depth Study

After having the total number of households by census count through questionnaire No.1 and the sketch of the areas, the in-depth study was carried out in order to know the actual beliefs, attitudes and knowledge about health related aspects of water, sanitation and hygiene among the people of the areas.

2.3.1 Selection of the Respondents

To supplement the case stories found during the stay in the study areas, an in-depth questionnaire (II) had been administered among the selected households at random.

Stratifying the universe into homogeneous groups at least on the basis of one criteria, age was taken to the prime factor for the sample design. The other related criteria for example, occupation, income and education were also considered in developing the sample design. The rationale behind the consideration of age as the prime factor was an assumption that the health awareness depend primarily on experience particularly in the rural areas of Bangladesh. And expereience goes with age, that is, with the increase age, experience increase as a result of which people become more aware about health and sanitation aspects. The same can be said for the slum area since the slum dwellers are somehow or other related with village customes, beliefs and attitudes. Educational level plays a secondary role in this regard.

The wife/women of the households were decided to be selected as respondents since the study focuses on women and children. The women are mainly responsible for health and water collection of the family and women and children are the first victims of the water related diseases. Therefore, the information were collected from the women of the areas.

It should be mentioned here that the universe consisted of all the women of the households belonged to the age group of below 30 years of age and the another consisted of the households where the lady of the households belonged to the age group of above 30 years of age.

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Secondly, from each age group, a sample was drawn at random following the theory of probability. About one-third of the total households had been selected for each area, what constituted, 70 samples for the village areas and 40 for the slum areas maintaining equal number in each stratum. In the village areas the investigators successfully interviewed 67 cases (96%) while in the slum area, the success was hundred per cent. The following tables show the extent of success in interviewing in the study areas derived from the difference between the selected and interviewed samples.

Stratum	Selected households	Interviewed successfully
< 30 years of age	35	33
> 30 years of age	35	34
Total:	70	67

Table - I : The extent of success in interviewing in the village areas.

Stratum	Selected households	Interviewed successfully
< 30 years of age	20	20
> 30 years of age	20	20
Total:	40	40

Table - 2: The extent of success in interviewing in the slum area.

The main causes for not meeting the target sample was the heavy flood in the village areas during the study period. It was not possible on the interviewers' part to reach those respondents due to heavy shower and flood.

2.4 Case Stories : How they were chosen

While observing the daily activities of the people in the areas and having discussion with them in relation to water use and

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sanitation practice different problems were found. People raised some interesting events as problems during the study period. The investigators observed and verified intensively those cases from different sources and developed them as case stories. Three types of case stories were developed which are as follows:

- some cases or events were recorded which occurred in the past;
- some were developed which occurred during the stay period in the areas; and
- some were based on the superstitious beliefs and practices pertaining to-use of water sources.

2.5 Field Work and Supervision

Three female investigators had been recruited since the respondents consisted of women. Translating the questionnaire into Bengali, the investigators were provided intensive training. Before going to the field with the in-depth questionnaire a pretest was carried out in two different areas in order to provide some field training, idea of the length of interview, feed back on the suitability of the questions and the flow of the sequence of questions etc. to the investigators.

The field work was carried out during April 1984 and July 1984. Two investigators were sent to the village areas and one to the slum area. They were assigned the responsibilities of conducting census of the area interviewing the selected lady of the households, following up the case stories and filling out the observation check list.

Two women sociologists supervised the work, to raise the morals of the investigators and to be acquinted with the actual behavioural pattern of the people of the areas which would facilitate them in writing the report.

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2.6 Data Processing

All canvassed schedules were edited and coded manually into specially designed cards called code sheets before tabulating the data following a code book prepared by SES Team based on SPSS in view of computer analysis. The data were tabulated, classified and analysed according to the previously prepared plan of action.

3.0 Socio-Economic Characteristics of the Respondents

For the purpose of the study, one hundred seven women were interviewed through a structured questionnaire. Of the respondents 67 belong to the two villages and 40 belong to the slum area. These samples were chosen from among 205 rural and 117 urban households.

3.1 Religion

Both the rural and the urban samples are mainly Muslims. Only 4.5 percent rural respondents and 25 percent urban respondents are Hindus as against relative Hindu female population of 8-9% in the two villages and 19% in the slum.

3.2 Age

The distribution of the sample population and the total female population, rural and urban, according to age is shown in table 3.1.

Table : 3.1

Distribution of female Population according to age
(relative frequency PCT)

Age Group	Total Population		Sample Population	
	Urban N = 203	Rural N = 342	Urban N = 40	Rural N = 67
below 20	37.9	42.4	30	19.4
21 - 30	24.6	24.9	20	29.9
31 - 40	17.3	13.5	25	23.9
above 40	20.2	19.3	25	26.9

3.1- Note: Total urban and rural population excludes girls upto age 10.

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The youngest rural respondents were aged 14 and the oldest respondent was 68 years old. Among the rural respondents, 14 were aged 50 and above and 8 women were in their teens. The youngest urban respondent was aged 15 and the oldest was 60. Among the urban respondents, 4 were in their teens and 7 were aged 50 and above. Thus the young, the middle aged and the old are all represented in the sample population.

3.3 Marital Status

All rural and urban respondents were married except one belonging to the slum who has not yet been married. At the time of the study, 89.6% rural and 80% urban respondents were leading a married life, 9% rural and 12.5% urban respondents were widows and 1.5% rural and 5% urban respondents were separated from their husband.

3.4 Family Structure

A majority of the respondents - 73.1% rural and 70% urban - lived in nuclear family situation. As regards the number of members of the families to which the respondents belonged, families with membership of 4 - 6, form the single largest group followed by family with membership of 7 to 10. This is uniformly true for both the urban and rural families as the table 3.2 will show.

Table: 3.2 : Size of Family

Number of Family Member	Relative Frequency	
	Urban	Rural
Below 3	27.5	22.4
4 - 7	40.0	41.8
7 --10	27.5	31.3
above 10	5	4.5

Families with six members preponderate both in urban slum (67.5%) and in rural area (64.2%). Since a family with six members would usually mean four children, families of the respondents may be generally considered to be medium sized in the Bangladesh context.

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3.5 Education

Generally speaking, rural respondents are illiterate and 91% of them do not know how to read and write. The slum respondents, however,are far better than their rural counterparts and rate of illiteracy among them is 55% ostensively because of the better facilities and greater awareness about literacy in the urban area. The comparative situation can be seen at table 3.3

Table 3.3

Literacy among the respondents

	(relative frequency)				
	illiterate	can read & write	primary level	secondary	higher
Rural	91	-	6	3	-
Urban	55	5	27.5	10	2.5

Literacy level of these who have reported to be literate is very low both among rural and urban women. One urban and no rural respondent had been to higher level of education. Among the literates urban samples 61% had ended up in the primary school.

3.6 Occupation

Occupationally, 92.5% of the rural and 87% of the urban respondents were housewives relative to 89% and 63% among the total female population of the villages and the slum. The rest of the women respondents do petty jobs except one urban woman who engaged in small scale business. Those who have income-earning occupation are usually widow and separated women. All the respondents depend on the male members of the family for livlihood.

3.7 Landholding

Very few households derived their livlihood from land. Only one urban respondent and 10 rural respondent (14.9%) reported land as

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the main source of income. This is so because 50.7% of the rural and 90% of the urban households were landless as the table below will reveal.

Table 3.4

Landholding (in relative frequency)

Size of farm	Urban	Rural
Landless	90.00	50.7
Below 25 decimal	5.0	3.0
26 - 50	-	11.9
51 - 100	-	14.9
101 - 200	2.5	10.4
Above 200	2.5	9.0

Size of the farm of the rural families who hold land is very small. Small size of farm as to the size of the family hardly provide subsistence to the household and many of these landholding family had to depend on the agricultural source for livelihood. As regards urban household, most of these families had come to the town in search of livelihood as land did not provide them living.

3.8 Income Level

Income of most families of the respondents, both urban and rural are earned by their male members from non-agricultural sources as the table 3.5 shows.

Table 3.5 (in relative frequency)

Source of Income	Urban	Rural
Land	2.5	14.9
Business	50.0	20.9
Service	40.0	10.4
Rickshaw Pulling	2.5	20.9
Labour	5.0	25.4
Other	-	7.5

Daily labour and rickshaws pulling (which are similar in status) together accounted for main source of income (46.3%) of the rural

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households. They belong to the lower class of the population. In the slum most important source of income is business followed by service. Both the urban and rural households engaging business and service may be categorised as middle class families. Informations regarding monthly income shown in the table below support this classification.

Table 3.6

Monthly Income (relative frequency)

Income Group	Urban	Rural
Below Tk.300/-	5.0	14.9
301 - 600	30.0	28.3
601 - 1500	50.0	43.00
1501 - 3000	12.5	11.9
Above Tk.3000/00	2.5	1.5

Families of rural respondents whose income is below Tk.300/- per month are actually below the poverty line. They and the families in income class 301 - 600 taka together (43.2%) represent the lower class. Families in the income groups 601 - 1500 and 1501 - 3000 may be counted as lower and upper middle class respectively. Only one rural and one urban respondent came from families with income above Tk.3000/-. Families of urban respondents correspond to the same economic class structure as the rural families. It may be pointed out that cost of living in the urban area is somewhat higher.

To sum up, rural respondents are predominantly illiterate housewives. Their families have little or no land holding and depend mainly on the non-agricultural income of the male members. They belonged to lower and middle classes. Socio-economic situation of the urban respondents are similar except that literacy rate is higher and land holding is lower among urban respondent families.

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Rural vs Urban

One reason for socio-economic similarity between rural and urban respondents is that the two villages are situated at the outskirts of the urban centre. They are just eight miles away from Tangail town and are accessible by car throughout the year. Tangail is 100 kilometres and Mymensingh 150 kilometres from Dhaka. Distance between the two towns is about 100 kilometres. Both are neighbouring the district of Dhaka. All the three areas selected for the study are therefore exposed to urban and modern influences : however urban slum has greater and direct exposure to urban environment.

The study is based on the limitation that the size of the respondents and the sample area is rather small in the context of the population of the entire country. A criticism often levelled against research of this type is that they are concentrated in areas in or near the vicinity of the capital city which are not representative of the vast majority of the villages which are comparatively unaffected by urban and modern influences. Forewarning should better be issued against any impression that the finding in the next pages can be of general applicability.

4.0 Sources and Uses of Water

In analysing the information gathered from the respondents and from the observation of the situation in the study area two points need to be clarified. One point, already mentioned, is that the size of the respondents and study area is so small that generalizations are difficult to make. Secondly, the climate of Bangladesh is characterized by marked discontinuity of rainfall which has great impact on the water supply during different seasons of the year. Traditional sources of water in the country are dug wells, ponds, ditches and rivers. Hand tubewells are a modern innovation being introduced in the rural Bangladesh in a gradual process. Availability of water from these sources is not the same throughout the year. Rainfall starts from mid-June

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and heavy downpour occurs from July to September. All led depressions including ditches and ponds are filled with water. Cornfields go under water which reaches the doorsteps of the rural homesteads. Rivers are in spate and there are occasional floods. Rainfall gradually declines from mid-October and water level starts receding. There is practically no rainfall from November till May. Ditches and ponds dry up. Rivers are without water and water level of dug wells goes down so that drawing of water becomes difficult. There is accute shortage of water till mid-June when the temperature also rises to the peak. Studies made in summer, winter and rainy season are therefore likely to yield different findings. Field work for the present study was undertaken mainly from May to July and the respondents were asked to report various uses to which water from different sources were applied on the day preceeding the interviews.

4.1 Uses of Water in the Village

The families of the rural respondents used water from all sources but for different purposes. Table 7 collates the relevant information.

Table 4.1

Sources of Water and Uses of Water for different Purposes

(Relative frequency)

Source	drinking	cooking	cleaning Utensils	laundry	bathing	Nature call	Others
Tubewell	55.2	43.3	38.8	7.5	9.0	35.8	10.4
Dugwell	44.8	50.7	44.8	16.4	19.4	41.8	25.4
Pond				9.0	7.5	1.5	
River				20.9	20.9	-	
Ditch		3.0		34.3	37.3	20.9	13.4
Other		3.0	16.4	4.5	4.5		
No reply				7.5	1.5		44.8

Water used for drinking is limited to two sources, namely tubewell and dugwell. The majority of rural respondent households (55.2%) however prefer tubewell for drinking water. Tubewell is least preferred for laundry (7.5%) and bathing (9.0%) purposes. Next to drinking, tubewell water is preferred for cooking (43.3%). First preference for cooking however goes to dugwell (50.7%). Substantial number of households use tubewell water for cleaning utensils (38.8%) and cleaning after nature's call (35.8%).

4.2 Reasons for Preference for Source of Water Supply

The respondents were not asked to indicate the reason for using water from a particular source for a particular purpose. The reason for preferring tubewell for drinking and its extensive use for cooking, cleaning utensils and personal cleanliness cannot therefore be clearly identified.

Accessibility to tubewell may be a major factor for its use for different purposes. Communal tubewells are installed in the compound of the affluent households who are powerful section of the rural society. They are therefore likely to preempt the use of the tubewell and restrict use by others who may use the water for limited purposes, say, for drinking water mainly.

Nearness to the source may be a factor for choosing a particular source. All households use water for cooking and drinking at the household. Cleaning of utensils is carried out in the households of 80.6% respondents. Water for the purposes has to be carried to household from the source by the women members of the households who have the responsibility of procuring and supplying water for domestic chores. In the purdah dominated rural society which prefers to restrict movement of womenfolk within or near the households, the nearer the source of supply greater the use. However relative distance of different sources of water from the household of the respondent is not available. Distance travelled by the respondents to get water for different uses are available and shown in the table 8.

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TABLE : 4.2

Distance Travelled for Getting Water for Different Purposes

Distrance	Drinking	Cooking	Cleaning	Laundry	Bathing
- 20 metres	46.3	50.7	65.7	53.7	58.2
21 - 40 "	22.4	17.9	13.4	7.5	6.0
41 - 100 "	22.4	20.9	13.4	20.9	22.4
101 - 200 "	4.5	6.0	3.0	4.5	4.5
Above 200 "	4.5	4.5	4.5	6.0	7.5
No response	-	-	-	7.5	1.5

Most households find water for all their uses within 100 metres. Of them, the largest number get water within 20 metres. Very few households go beyond 100 metres for water.

Place of use of the water appears to have some relation with tubewell or the source of water. This is shown by the following Table.

TABLE : 4.3

Place of Use and Source of Water

	Place of Use		Tubewell as Source of Water
	Household	at Rource	
Drinking	100	-	55.2
Cooking	100	-	43.3
Cleaning	80.9	19.4	38.8
Laundry	14.9	77.6	7.5
Bathing	20.9	77.6	9.0

Tubewells are primarily used for drinking water for use at home. Laundry and bathing are avoided at the tubewell. Most tubewell being in communal use, laundry and bathing at the site will cause friction among users and mutual convenience might have dictated a mutual arrangement that water from tubewell should be carried home and not used at the site and bath and laundry not take place at the tubewell.

contd.....1.16

One reason for using tubewells for drinking purposes mainly may be the relatively low quantity of water used for drinking. Since tubewells are for community use, these will be overpressed if all households tend to use them for all their purposes. Moreover, it will be physically impossible for all to use the tubewell within the constraints of the day light norms.

Respondents were asked to report quantity of water required for different purposes in a day. Information received may be accepted with limitations it suffer from. One reason of such limitation is that quantity of water required for different purposes will differ according to summer, winter and rainy seasons. Only when water is carried in big pots and stored for subsequent use, some guess may be made. Even this is also not free from confusion because the size of the bucket varies from time to time . On the otherhand when water is directly used at the place of the source, such as bathing and laundry, attempt at quantification is wellnigh impossible. This is why 12, 56 and 50 respondents have not provided the quantification details about cleaning utensils, laundry and bathing respectively. The available information, presented below, is not helpful in coming to a conclusion.

TABLE 4.4

Quantity of Water Used for Different Purposes Per Household

Quantity of water used	PURPOSES				
	Drinking	Cooking	Cleaning	Laundry	Bathing
Below 10 litres	13.4	6.0	9.0	-	-
11 - 20 "	44.8	31.3	28.4	6.0	3.0
21 - 30 "	31.3	38.8	34.3	4.5	9.0
Above 31 "	10.4	20.9	10.4	6.0	13.4
Missing	-	3.0	17.9	83.6	74.6

Generally speaking, abundant supply in rainy reason together with freedom of use and easy use may be one of the factors that

contd.....1.17

influence choice of ditch and river for laundry and bathing. Using ditch and river water for laundry and bathing does not require as much labour as for fetching or pulling water. Pumping and fetching water from tubewell and pulling bucket from dugwell are obviously strenuous. For drawing huge quantity of water from tubewell or dugwell, one has to give hard labour which may be saved by going to a ditch and a river. Several cases substantiate the statement.

> Rabeya, wife of a Rickshaw puller, does not own any tubewell, dugwell or pond. For drinking water she goes to the tubewell. For laundry and bathing she and her family go to the river which is about 100 metres from her house. Rabeya feels relaxed about availability of water during the monsoon when the nearby ditch is full with water and she can use any quantity of water in the ditch for laundry and bathing at her will. No one can dictate her. She is therefore happy to use the ditch water.

Modern health experts consider tubewell water relatively free from germ and recommended it over other traditional sources for health reasons. Our respondents being illiterate housewives, are not likely to be aware of the superiority of tubewell water. Western Medical Science is responsible for the invention of germ theory. Indigenous and traditional medical practices -- Unani, Ayurvdic and folk systems have no place of germs in their scheme and they do not ascribe diseases to quality or source of water. The respondents were also individually asked to cite the principal causes of the waterborne diseases. Only a negligible number of respondents have identified impure water as cause of disease. Table 4.5 illustrates that.

contd....1.18

TABLE - 4.5

Impure Water as Cause of Diseases.(Relative Frequency)

Diseases	Percentage of Respondents Reported Impure Water as a Cause
Diarrhoea	-
Dysentry	-
Cholera	4.5
Skin diseases	3.0
Round Worm	-
Hook Worm	-

Impurity reported as cause of diseases does not necessarily mean contamination with germ. It may mean existence of ordinary dirt and sand particles in the water. The respondents who use sources other than tubewell for drinking were asked if the water was subjected to any treatment before drinking and 73.33% respondents drank the water as it is. The rest reported to filter the water before use. Filtering is done by allowing the dirt and sand particles to settle down at the bottom of the container. Sometimes allum is used to help setting the dirt. Water is also strained by a piece of cloth. Tara Banu does it. By this process dirt and sand are removed but the water does not become germ free. Respondents were also asked to report various means of preventing diseases. Purity of water was not considered a preventive measure by the respondents for any other disease except cholera. Only 9% of the respondents considered water as a means of preventing cholera. Saliman uses tubewell water for drinking. Asked to give reason for the preference, she said that tubewell water is clean. She knows that it is clean and that is all. She does not know other benefit of tubewell water.

Irrespective of the source, a majority of women are satisfied with the existing arrangement for drinking water.Others complained mainly about distance of the sources, but none has any grievance against contamination as shown in Table 4.6.

contd...1.19

TABLE - 4.6
Dislikes About Water for Drinking

Views About the Water Source	Relative Frequency
Water always good	55.2
Bad Smell	1.5
Far Away	-
Problem with others	17.4
Dirts	1.5
Other	4.5

Many women (19.4%) walk long distance to get drinking water from tubewell. Rashida, mother of three children, has to perform all domestic chores alone and without any helper. She gets up at 5 O'clock in the morning and keeps on working throughout the day without rest. There is a ditch outside her residence and two dugwells within 15 metres of her house. The tubewell is however situated 80 metres away. She goes to the ditch for bathing and laundry; but walks 80 metres everytime for fetching drinking water from the tubewell. She definitely has preference for tubewell as a source of drinking water.

Amena's household has a well. She does not use its water for drinking water as the water contains lot of mud and the well is infested with frogs. She uses it for cooking and washing. For drinking Amena travels a long way to reach a tubewell. She even has to cross a stream by boat to get to the tubewell.

Shohagi has no tubewell in her compound, but there is one in the neighbourhood which due to problems with the neighbours, she cannot use. Shohagi travels by boat to another tubewell to get drinking water.

4.3 Socio-cultural Factors and Use of Water

It was observed that some women could not use tubewell water because they were prevented by previling soci-cultural factors. Narrow outlook of the owners of the private tubewell is

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sometimes a deterrant.

> Ameer Ali, owner of a tubewell does not like his neighbours using his tubewell. Inmates of his house are made to use the tubewell in the morning and to store enough water for the day. He then disconnects the pump before neighbours can come for water.
>
> Marzina, another owner of tubewell, does not allow any outsider to come inside the compounds for fetching water.

The Power Structure in the village affects extent of use of tubewell by the villagers. Most tubewells are installed by Union Parishad and Voluntary Agencies for community service. But the affluent and powerful village leaders manage to get these tubewells sunk in their compound. By virtue of their might and position, they pre-empt the use of the tubewells for their own household and regulate and control the use by other villagers. The poor and the landless villagers are most disadvantaged in procuring this otherwise community service.

> Ali Hossain, a powerful man in the village, managed to get a tubewell installed in his compound. The tubewell was distributed by a Non-Government Organization (N.G.O) under pure drinking water supply programme and was therefore meant for community use. But Ali Hossain has been guarding the tubewell against possible use for the poor villagers since the installation. He has been particularly rude to the women who tried to use the service. As a result of the attitude of Ali Hossain, the helpless village women had to abandon the idea of getting water from the tubewell. It was impossible for ordinary villagers to establish their right against the powerful village leader.

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Strained social relationship between families was found to restrict water use.

> Jotsna used to fetch drinking water from the tubewell sunk in the compound of her brother Altu. Last month when her grandchild went to the tubewell for a wash, he had a fight with Altu's daughter. The incident led to quarrel between the two families and ended in Altu warning Jotsna against use of the tubewell in the future. Since then Jotsna stopped going to the brother's compound for collecting water. She now depends on a dug well for drinking water.

Social sanction against a particular family may force it to abandon the use of the tubewell. Village society has its own norm of communal behaviour. Violations of the norms are punished by social boykot. When a family is condemned to social boykot other villagers sever all social contact with the family. Villagers do not visit the condemned family who, in turn, are not allowed to go to the villagers. The family is socially isolated. In such case of isolation, the family is debarred from the service of the community tubewell.

> Abdul Sabur Khan, a weaver has a 18 year old son named Sunaullah. He fell in love with Champa daughter of Malek of the same village and wanted to marry her. The village elders opposed the marriage. But Sanaullah dis-regarded the elders. He left the village with Champa and subsequently married her. The village elders reacted sharply. They held Sabur Khan responsible for the misdeeds of his son and condemned the family to social isolation. Abdul Sabur Khan had no tubewell or well in his compound. He was prevented from using tubewell and wells in the neighbour's household and faced serious hardship for want of water.

It has been found that many villagers are consious of the advantages that a tubewell in the compound may afford. Some

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villagers are therefore willing to buy tubewell for family use. But tubewells are not easily available for purchase. Salimuddin Mondol and Sabed Ali deposited cash money with Union Parishad members for the purchase of tubewells. Salimuddin got back the money after about five months and Sabed Ali waited for four months but in vain.

4.4 Education, Occupation and Sources of Drinking Water

Although tubewell is a modern innovation, literacy of the respondents and their occupational status does not appear to have any effect on the decision making regarding use or preference for tubewell. Table 4.7 seeks to relate sources of drinking water with education and occupation.

TABLE : 4.7

Education and Source of Drinking Water

Level of Education	Use of Tubewell	Use of Dug-well
Illiterate	55.7	44.3
Primary	50.0	50.0
Secondary	50.0	50.0

Occupation and Source of Drinking Water

Occupation	Use of Tubewell	Use of Dug-well
Service	50.0	50.0
Labour	100.0	0.0
Housewife	56.5	43.5
Other	0.0	100.0

In fine, it may be said without the danger of being contradicted that tubewell has been accepted by the rural society. At present its use is concentrated to drinking mainly and cooking secondarily. If number of tubewells could be increased and their location dispersed to reach all households, use of tubewell will increase and get diversified.

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4.5 Water Use in Urban Slum

In the Urban Slum, 40 women respondents reported their use of water from different sources in the manner described in the following Table No.4.8.

TABLE : 4.8

Sources of Water in Uses of Water in the Slum

Source of Water	drinking	cooking	cleaning utensil	laundry	bathing	Nature's call	Other
Tubewell	95.00	95.0	87.5	75.0	82.5	87.5	-
Dug Well	-	-	5.0	5.0	2.5	5.0	-
Pond	-	-	-	15.0	12.5	-	-
River	-	-	-	-	-	-	-
Ditch	-	-	-	2.5	-	2.5	-
Other tap water	5.0	5.0	7.5	2.5	2.5	5.0	-

In the urban slum tubewell is almost the single source of water. Overwhelming majority of the slum respondents use tubewell water for all purposes. Water from tubewell is used for both drinking and cooking by 95% of the respondent household. The rest 5% use tap water. Unlike the villages, dug water is not at all used either for drinking or cooking. Remnants of village practice, however, still subsist in laundry and bathing. After tubewell, pond is the next popular source of water for laundry (15%) and bathing 12.5%). Tap water is used in slum for all purposes by a few households. This is a modern innovation that has not invaded the rural Bangladesh.

The study villages have open space with number of ditches, ponds and bushes. A river also flows by. On the otherhand, there are only 11 communal tubewells for 205 households and these tube-wells are not uniformly distributed.

The situation in the slum is different. The slum is crowded with habitants with only two small ditches and no river around.

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There is a lone pond in the compound of the mosque, but access to it is restricted due to sanctity of the mosque. On the otherhand there are 12 communal tubewells for 117 households. Slum is divided into different clusters of households, each of which has atleast one tubewell for the dwellers. The tubewells are installed by the Municipality and the residents have better access to them relative to their village counterparts. Slum dwellers primarily use tubewell for all purposes ostensivly because of better access to it and relative scarcity of the traditional sources.

5.0 Sanitation in the Study Area

In Dhaka and Chittagong cities, modern water and sewerage services are provided by state-sponsored water and sewerage authority. In other bigger towns where running water supply is provided by local bodies like Municipality; modern sanitary toilet system exists. In smaller towns, the usual arrangement is service latrine set up by every house. These latrines are serviced by sweepers employed and paid by the Municipality. Municipal sweepers remove the night soil from the latrines in early morning and arrange for its disposal in hygienic way. In the villages there is no running water and no sweeper is available. Households build temporary latrines at the backyard with bamboo jute sticks and jute canvas. A big hole is dug under the latrine to hold the night soil from time to time, ashes are thrown over the night soil to cover it and to suppress bad smell. In course of time the hole gets filled up and the latrine is shifted to a new site. Very rich farmers sometimes build permanent structure on a dugwell for use as a permanent latrine. Recently Government has introduced a kind of sanitary toilet which suits village condition and does not require running water supply.

In the two villages, families of 42 respondents representing 62.7% of the rural sample population have latrines. Of these families, 67.5% own the latrine while 32.5% families share the

contd....1.25

ownership with neighbours and relatives. Only one of these latrines is pucca. All the others are kutcha latrines. These kutcha latrines are the temporary type of rural latrine described above. There is no door in 92.9% and no roof in 97.6% of the latrines. As regards the pucca latrine, the door is made of wood, wall and the squatting plate is made of cement and the roof is of C.I.sheet. 59.5% of the latrines are located at a distance of below 10 metres from the interior of the house; 31% are at a distance of 11 - 18 metres and the rest are 19 - 50 metres far off. Squatting place is dirty in 54.5% cases while walls are also dirty in 60% cases. However, majority of the latrines (78.6%) did not emit bad smell at the time of survey nor was there fly or mosquito in 66.7% and 71.4% cases respectively. Condition at the latrines though not hygenic, was not altogether deplorable.

5.1 Use of Latrine : in the Village

The respondents were asked if they used any fixed place for defecation. 41 rural respondents representing 61.2% of the total sample population answered in the affirmative. Since 42 respondent families are reported to have latrines, it is evident that these 41 respondents used latrines for defecation. One family with latrine did not use it.

The family of Ameruddin built a latrine with bamboo and jute stick on the occasion of the marriage of his younger brother. The latrine was used for a few months by the young bride while other members continued to go to the field. The bride has also given up the use of the latrine because the other members of the family continue to follow the traditional practice.

The rest 26 respondents (38.8%) who do not use any fixed place for defecation, do not have any latrine.

Women in all the respondent families with latrine use it. But adult males in only 26 out of 41 families with latrine take the service. Use of latrine by children is less than adult males.

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In Ali Hossain's family children are not allowed to use latrine. It is felt that children make the latrine dirty. The family feels that adult men also should not use latrine which should be used by women only.

Sundari is 24 years old Muslim housewife. Her house can be located at the western end of the village. The wall of the house is made of bamboo and roof is made of tin sheets. Sundari's husband Ameruddin is a weaver. Both of his legs became paralysed. It is not a very well-to-do family.

It is a joint family and total number of family members is nine. Sundari has two sons and one daughter. Ameruddin's mother, brother and his wife and one niece stay with him. Sunderi collects water from a tubewell for drinking. For all other purposes she collects it from a pond. Sundari has a kutcha latrine which is made of jute stick. Female members of the family do not use this latrine. They have the feeling that elderly male members of the family don't like that the female members should not enter into a latrine infront of them because it hampers the privacy of the female. On the other hand, female members feel that it is a matter of disgrace to enter into a latrine infront of male members. So they have changed their defecation practices and defecate in the open field at night. They feel that open field is much safe than a bush or other places. Because there may be snake or other poisonous insect inside the bush.

Sundari and other female members seldom use the latrine at day. They do not feel any necessity of latrine. They have another latrine which is used by Amiruddin himself. It is not possible on his part to go to an open field for defecation. Amiruddin feels that latrine shojld be used by sick persons only. If everybody use the latrine then it fills too fast and creates problem while cleaning the latrine. As the latrine is not used by anybody, so they do not maintain or clean it. In the monsoon period, the female members prefer to go by the side of a ditch to defecate rather than going to the latrine.

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There is clearly a preference for women in the use of latrine. If there is a latrine in the family, all female members are expected to avail of it invariably. This preference is understandable in the purdah dominated rural society. Use of latrine by sex is shown in the table below.

TABLE : 5.1

Use of Latrine by Men, Women and Children

Sex	No.of families having Latrine	Number of Users
Men	42	26 (63.4)
Women	42	41 (100.0)
Children	42	16 (39.0)

5.2 Cleaning of Latrine

Not only that women have the preference for use of latrine, it is they who have the responsibility of cleaning the latrine. Only in one household, male members clean the latrine as the table 5.2 will show.

TABLE : 5.2

Cleaner of Latrine

	Absolute Number	Relative Frequency
None cleans	9	22.0
Self	13	31.7
Female Member of the family	13	31.7
Female members of neighbourhood	5	12.2
Male member of the family.	1	2.4
	41	100.0

Since self means the respondents, the latrine is cleaned by women in 75.6% cases. 22% latrines are not at all cleaned.

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In 84.4% cases the latrines are cleaned with ashes. 21 (51.2%) latrines are cleaned every week and 9 (23.0%) latrines are cleaned once every day. One latrine (2.5%) is cleaned after every use while one is cleaned when necessary. Other latrines are not cleaned at all. Women in the rural households remain busy with multifarious domestic and other bari-based activities from sunrise to sunset. They are often overworked. Moreover cleaning latrine is considered a dirty job. It is not always possible to clean the latrine regularly. With the means and time constraints majority of the households try to keep the latrine as clean as possible and women always take such hard task.

Privately owned latrines are exclusively used by the family members except in two cases where relatives and neighbours also use the privately owned latrine. 17 respondents reported that main user for not sharing with others is that others do not need to use. Cleaning and maintenance problem is cited by 4 respondents as case of non-use by non-family members.

5.3 Place of Urination and Defecation

As reported earlier very few children use latrine. Only 16 (24%) respondents reported use of latrine by children. Male and female children in age group 3 - 6 use fixed place for defecation in 13.4 and 17.9% families respectively. In the age group 6 - 10 male children in 17.9% and female children in 19.4% families go to fixed place. Only 38.8% of the mothers teach their children to use the latrine. The training does not start before the age of 3.

They use various places such as behind homestead, road or railway line, bushes or open field; back of river, canal, ditch and pond as well as the courtyard, verandah and well side. Some do the act anywhere in the compound. The Table 17 shows the use of places for urination and defecation by men, women and children.

contd.....1.29

TABLE : 5.3

Place of urination and defecation (Village)

Place	Urination			Defecation		
	Male	Women	Children	Male	Women	Children
Behind Homestead,Road, Railway	38.8	64.2	7.5	1.5	6.0	13.4
Behind Bushes, Open Field	40.3	9.0	1.5	44.8	32.8	17.9
River,Canal & Ditch	-	-	-	13.4	1.5	-
Courtyard, Verandah,Well	4.5	1.5	56.7	-	-	22.4
Anywhere in Compound	-	-	3.0	-	-	3.0
Other	-	1.5	1.5	1.5	1.5	1.5
Non-Applicable	19.4	23.9	29.9	38.8	58.2	41.8

For urination men usually go behind homestead road and railway, bush and open field. Women prefer to go behind homestead, road and railline. Children primarily use the courtyard for urination. Both men and women prefer to go behind bushes and open field for easing themselves. A good number of men also go to the bank of river, pond etc. Children go almost all places such as behind homestead, road, railline, bushes, open field and coutyard.

5.4 Attitude About the Latrine

The respondents were asked to pass opinion on the ideal distance of the latrine for private use and latrine for communal use from (a) household, (b) source of water and (c) bushes. Respondents have put forward all sorts of distance from 0 metres to 63 metres and there is no general consensus among the respondents regarding the ideal location of the latrine. Responses received are reproduced in Table 5.4. Only two examples are shown in the Table.

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TABLE : 5.4

Attitude About Location of the Latrine

Distance in Metres	Water Source Communal Latrine	Water Source from Privately owned Latrine
Below 10 metres	10.4	35.8
11 - 18 "	28.4	50.7
19 - 50 "	23.9	11.9
Do not Know	35.8	1.5

There seems to be some concensus regarding distance from bushes. For shared latrines 46.3% respondents opted for a distance of below 10 metres from bush. Corresponding percentage for private latrine is 67.2%. Preference for nearness of latrine to bushes is understandable. Most latrines are set up at the backyards which are usually bushy. Moreover, bushes give privacy to latrine which is built in a make-shift manner.

Privacy seems to get the top priority in the matter of use of latrine. The respondents were asked to indicate the issues that they consider important in constructing a latrine and 83.6% respondents considered invisibility for outside to be the most important consideration. Privacy at the time of entering the latrine is considered most important by 10.4% respondent and second important by 29.9% respondents. It seems that location of the latrine is guided by privacy consideration rather than by sanitation consideration.

5.5 Opinion About Present Arrangement

With the situation as it is, 25.4% of the respondents are satisfied with the existing arrangement. These respondents except one use latrine. The rest of the respondents who have no latrine are not satisfied with their arrangement. Of those who are not satisfied, 11.9% can not set up a latrine due to poverty, 7.5% respondents do not have enough land to build a latrine in the homestead. It has been reported by 46.3% respondents that it was possible to build a latrine with locally available building materials, but it is not however known why they are not doing so. Ostensibly many of them are so poor that they cannot manage even local materials for building latrine.

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5.6 Income and Fixed Place

However ranshakle the structure may be construction of latrine needs some money and land. Poverty and landlessness are likely to be single most important factor in the decision to build a latrine in the house. The Table below (Table 5.5) justifies the presumption.

TABLE : 5.5

Income and Fixed Place of Defecation and Ownership of Latrine

Income	Fixed Place of Defecation		Ownership of Latrine	
	No	Yes	Private	Communal
Below Tk.300	80.0	20.0	50.0	50.0
Tk.301 - 550	36.4	63.6	42.9	57.1
Tk.551 - 1000	36.7	63.3	73.7	26.3
" 1001 - 1500	28.6	71.4	60.0	40.0
Above Tk.1501	11.1	88.9	85.7	14.3

Of the 9 respondents with income above Tk.1,501 per month, only one has no fixed place of defecation while of the 10 respondents with income below Tk.300, 8 do not use any fixed place. Of the two respondents below income of Tk.300 who have fixed place of defecation one has a private latrine and the other shares it. On the otherhand, of the 7 respondents above income 1,501 using a latrine, 6 have private latrine in the household. The only pucca latrine among the respondent household is owned by one respondent above the monthly income of Tk.1501.

Since 95.5% of the respondents belong to one religion - Islam and 91% of the respondents are illiterate, it is not worthwhile to relate religion and education with latrine facilities. It was found that all the literate respondents go to latrine. This is probably because, they are also likely to come from relatively well-to-do families. Use of latrine was not found to have anything to do with occupation. In the two villages, income level therefore plays a much more important role than education, religion or occupation in decision regarding constructing latrine.

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In the purdah based rural society, there is considerable restriction on free movement of women. These restrictions are more rigorously enforced in richer households than in poorer household. With many rich household purdah is a status symbol. These families are therefore compelled by the circumstances to set up latrine within the household. Poorer women are comparatively free to move about and the urgency to find place is not that acutely felt. Economic condition of the family has thus direct relationship with the construction of latrine. This is substantiated by the cases stated below.

Aduri's family has no latrine. They use fields and bushes as the place of defecation. But in monsoon all these go under water and they have to ease themselves in standing position. The discomfort is enormous and they would prefer to have some arrangement at the homestead at least in the rainy season. They are landless poor and can not pay for a latrine. They also do not have enough land to build a latrine.

Saliman's family has no latrine. They have serious inconvenience in rainly season. They have to go behind the jute field in raft built of banana tree. They could have built a latrine if they could afford the cost.

5.7 Sanitation in Urgan Slum

In shifting the analysis from the villages to the urban slum, it is worthwhile to repeat the environmental differences. The slum does not have the advantage of bushes, open field and river. Unlike the villages who own their respective households, the slum dwellers own neither the land nor the dwellings. They can not build latrines which are provided by the landlords whose tenents they are. The dwellings in the slum are conjested and unlike villages do not leave any space as courtyard. Since slum dwellers have restricted scope for defecation, they have to have build place within or near the compound for the purpose. That is why only 17.5% of the urban respondents reported to have no latrine in their family as against 37.3% rural families having no latrine. Structure

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of latrine is also improved in the urban slum where only 36.4% latrines are kutcha compared to rural areas where only 2.4% latrines are pucca. Only 7.5% of the urban latrines are without door, the corresponding percentage for rural latrines is 92.9%. Only 2.4% rural latrines have doors made of wood or tin while 45.5% urban latrines have wooden or tin doors. Squating plate is cemented in 2.4% rural and 72.7% urban latrines. In the rural respondents' households 31% latrines have no wall and 2.4% latrines have bamboo and cement walls. In the urban slum 42% latrines have bamboo and 51% cement wall. Only 3.0 latrines are without wall. In the villages, 97.6% latrines are without roof, as compared to 45% urban latrines. Moreover, 33.3% urban latrines have cemented roof.

Although quality of the structure is better in the slum, condition is not different rather worse than in the village as the following table suggests.

TABLE : 5.6

Latrine Condition : Urban Vis-a-Vis Rural

Condition	Urban	Rural
Walls		
Dirty	48.5%	60
Clean	51.5%	40
Squating Plate		
Dirty	60.6	54.8
Clean	39.4	45.2
Bad Smell		
No	21.2	78.6
Yes	78.8	21.4
Flies		
No	33.3	66.7
Yes	66.7	33.3
Mosquitos		
No	81.8	71.4
Yes	18.2	28.6

Contd....1.34

Slum is over conjested. Such conjested surrounding requires efficient sewerage and drainage system. But these services are usually inadequate in slums. As a result condition of the latrine is not upto the mark although most latrines have pucca structure.

> Latrine at Bilkis Banu's house was constructed several decades ago. The faeces from the latrine have piled up year after year. At the time of interviews a heap of old stool was found at the backside of the latrine. Husband of Bilkis Banu reported that number of sweepers under the Municipality is quite inadequate as compared to the growing size of the town. As a result, the sweepers are very irregular in visiting the latrine. Even when they visit, they do not carry away the stool, but just throw the faeces a few steps away. It is not possible to get the latrine cleaned by engaging a sweeper privately as the cost is very high due to shortage of sweepers.

While on the one hand, there is the problem of sewerage, on the other hand, number of people using a latrine is greater in the slum than in the village as the table below will show.(Table 5.7).

TABLE : 5.7

USERS of LATRINE

Number of persons using a latrine	Rural Male	Urban Male	Rural Female	Urban Female
Below 3 persons	26.5	12.5	41.8	15.0
4 - 6 "	11.9	30.0	17.9	35.0
7 - 10 "	-	15.0	1.5	15.0
Above 11 "	-	17.5	-	10.0

5.8 Nature of Ownership of Latrine

In the slum, 82.5% of the respondents use a fixed place for defecation as against 61.2% rural respondents. Latrine is thus

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more widely in use in the town than in the village. Unlike villagers where all latrines are owned by the households alone or jointly, in the slum 15.2% of the latrines are publicly owned. These have been installed by the Municipality for communal use. The rest of the latrines have been put up by the land-lords. Of these latrines 27.3% are provided to individual tenant families; while 57.6% latrines are shared by several tenant families jointly. Thus only 27.3% families have private use of latrine.

In the urban families which are provided with latrines, both male and female members use the same latrine. Children also use the latrine.

5.9 Cleaning of Latrine

As in the villages the urban latrines are mainly cleaned by the women. The following Table (5.8) records the cleaner of the latrines.

TABLE : 5.8

Cleaner of Latrine

Cleaner	Absolute Frequency	Relative frequency
None cleans	6	18.2%
Self	15	45.5%
Relation,Neighbour(female)	5	15.2%
" " (Male)	2	6.1%
Husband	1	3.0%
Servant	2	6.1%
Sweeper	1	3.0%
Others	1	3.0%

Female respondents together with female neighbours form 60.7% of the cleaners. Unlike in the village, latrines are also cleaned by servants (6.1%) and sweepers (3.0%). This is so because domestic servants and sweepers are available in the urban areas. Due to the low income level most slum dwellers are unable to afford servants or sweepers. They have to clear the latrines themselves.

contd....1.36

Unlike villages, 75.8% of the latrines are cleaned with water. The users have to wash and clean the top and the sitting plate. The night soil is removed by the Municipal sweepers, That is why the slum latrines are to be washed by water mainly. Only 6.1% latrines in the slum are cleaned with soil and clay. Cleaning takes place once a week in 30%, and once a day in 15.1% cases.

Of the 9 families who have latrines for private use, 33.3% do not allow use by non-family members because communal use creates problem of cleaning and maintenance and also because neighbours have not approached them. Although a majority of the families have to share latrines, 55% of the such users do not like the arrangement.

5.10 Use of Fixed Place for Defecation

In the slum 3 - 6 years old male as well as female children use fixed place for defecation in 40% of the respondnet families. Male and female children between 6 to 10 years go to fixed place in 15 and 12.5% families respectively. Mothers train children for use of fixed place in 65.0% urban families. The above figures reflect greater care and interest taken by urban mothers in matters of sanitation for children than rural mothers.

Only 17.5 of the urban families do not use latrine. Urban families are therefore much better placed than their rural counterparts in respect of sanitation arrangement. The urban families with no latrine facilities go behind the homestead, road and railline etc. But unlike village people they have no bush or open field to go to.

5.11 Children's Use of Fixed Place for Defecation

During the survey of in-depth study it was gathered from the women that they think they don't feel child faeces are dangerous and tha's why they don't feel the necessity of teaching them about latrine use or defecation in a fixed place. In the villages women complained that when children are small, they forget any advice and they are also scared of going to latrine; rather they feel easy to defecate within the household.

contd.....1.37

Rokeya of Char Indra Belta have a katcha latrine surrounded with banana leaves. She does not allow her children to go there because she argued children defecate more than adults and if they go to the place quite frequently the ditch will fill up soon and they have to dig again. She also complained that children use to throw bricks, stones, bushes etc. in the ditch and that create problem too. In this village Jostna believes that the latrine is necessary for invalid persons. Jarina, a mother of 3 children in Char Indra Belta said that during rainy season she discourage her children to go to her katcha latrine because it has no roof and rain drops on leaves, branches etc. of the tree can fall on their head. Besides, children are scared of using latrine as they may fall inside, she also argued. Joytun of Char Rakhit Belta said that it's better if children can defecate in the canals because canals can carry away the feces and there's no question of bad smell. Following table 5.9 will show the percentage of respondents in both villages and slum areas whose children do not use fixed place for urinating or defecation purposes.

TABLE : 5.9

Place of defecation and urination of children not using fixed place of defecation

Place	Slum		Village	
	Urinate (N:15)	Defecate (N:15)	Urinate (N:47)	Defecate (N:39)
1. Behind homestead, beside road, rail line	26.7%	40.0%	10.6%	23.1%
2. Behind Bush, Open field	-	6.7%	2.1%	30.8%
3. Within the courtyard	66.7%	53.3%	80.9%	38.5%
4. In courtyard, varanda, well	-	-	4.3%	5.1%
5. Anywhere in the compound	6.7%	-	2.1%	2.6%

The table shows that most respondents said that their children defecate or urinate within the courtyard. In the slum areas it was found that due to lack of open place children defecate even within the living room; on the bed, on sitting tools etc. Badrun Nesa,

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a slum dweller argued that children don't need privacy, they can defecate anywhere and it is not impure and does not bear any bad smell. Sajeda lives in a slum area and she said that she teaches to her children to defecate in a fixed place but children don't listen to us and it's not possible to follow children always and talk to them. Hamida Banu, whose mother was a school teacher in a village high school, believes that children listen to the teachers therefore if they get the lesson in school they must abide by the rules. Razia of Char Rakhit Belta said, "if the parents don't use latrine, how the children will learn that, when we go to the bushes, our children follow us too. There is no point of teaching children except through the example of parents". Marzina who is presently living in slum area complained that the people who has pacca latrine don't let outsiders to use and sometime they beat children if they move around their latrine. Besides, children feel comfortable in open place and they don't listen to their parents.

Age also play a vital role in this factor. Following table (5.10) will represent the findings.

TABLE : 5.10

Age of Children When Taught to Use a Fixed Playe of Defecation

Age	Slum		Village	
	Female (N=21)	Male (N=22)	Female (N=25	Male (N=23)
Below 3	23.8%	22.7%	16.0%	17.4%
4 - 6	52.4%	54.5%	80.0%	73.9%
Above 7	23.8%	22.7%	4.0%	8.7%

Majority of the mother teach their children about using fixed place for latrine when they are between 4 and 6 years old. The percentage is higher in villages regarding training to male and female children. Razia of Char Indra Belta said that she thinks age 4 is best to teach the children because they start to understand from that time. The number of respondents are higher in the

contd....1.39

case of female children in villages compare to slum areas. Rabia of Char Rakhit Belta said that female children usually stay within household help their parents in household work, take care of small babies at the age between 4 and 6 and they learn more from their parents, e.g. use of latrine but male children at this age go to field either with cattle or to help ploughing land for their fathers. "My sons are 7 and 10 years old. They stay most of the time with their father in the field and return home in the evening, said Jamila of Char Indra Belta, and therefore I don't get time to teach him about any matter". But Nurbanu, living in slaum area, said, "my children go for begging and I don't get time to teach them. Her son is 8 and daughter is 9 years old. Jobeda of the same area argued that from the age 7 or more the boys and girls go out of the home in search of paid work". But she thinks children get proper training of any kind at the age of 5.

The data achieved during survey showed that about 63% slum and about 89% village mothers teach their children to wash their hands with water, soap or mud after defecation. But during survey children were seen wiping their hands on the grass after defecation. The case studies gathered in both villages and slum areas showed that small children usually were cleaned by their mothers and few cases mothers were found using soap or sand. Usually they use plain water and some cases ash as an addition. Although in cases of children case studies didn't mention the age who don't wash hand after defecation.

On the above conditions it is important to start homebased health education training for the children at an early age. Training for parents and teachers will be given emphasis. Children's training starts at home, therefore, mother is responsible at first to train her child when the baby is 3 years old. At the age of 5 children starts going either to primary school or to Madrasha. Therefore school teachers and religious teachers of Madrashas should go through special health education training covers in order to transfer their knowledge to their students at later stage.

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5.12 Attitude About Ideal Location

As regards ideal location of latrine from the point of view of distance from household, sources of water and bushes, respondents have differed widely in their opinion. As regards distance from bush, unlike the village respondents, 52.5% of the slum dwellers had no idea, ostensibly because bushes are conspicuous by their absence in the slum. Infact nothing can be inferred regarding the urban respondents idea regarding hygienic distance of latrine from household or source of water.

As regards most important consideration in constructing latrine, the urban respondents agree with their rural counterparts on the importance of privacy. Invisibility to outsider is reported to be the most important consideration by 42.5% urban respondents and second most important consideration by 27.5% respondents. Privacy to enter the lavatory is considered most important by 12.5% respondents while the top priority to distance from road is given by 10% of the urban respondents. Evidently all these consideration are prompted by the preference for privacy.

5.13 Satisfaction About Present Arrangement

Only one respondent is satisfied with the present sanitary arrangement. The rest of the respondents would welcome improvement, but like their rural compatriots, they cannot bring any improvement due to poverty and lack of land.

5.14 Constraints to Improvement

37.5% of the slum respondents can not bring many improvement to the present situation due to poverty; and 32.5% cannot do anything due to lack of space within the dwelling compound. Some set of question was applied to both rural and urban respondents although the situation were different. Rural households were responsible for constructing, maintaining and improving latrines in respective households. In the slums, latrines are constructed by the landlords mainly and by Municipality secondarily, The

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tenant respondent can neither construct nor improve the latrines. When the respondents say that latrines cannot be improved for want of land they are speaking on behalf of the landlord and voicing the actual situation that the slum is too conjested to allow sufficient space for having a satisfactory latrine arrangement. When they refer to poverty they apparently mean that if landlord is to improve the latrine, he will expect higher rent which the poor tenants cannot pay. The respondents live in the slum as they cannot pay for the rent for a house in a decent residential area.

In fine overwhelming majority of the urban respondents have access to latrine while, on the otherhand, availability of open space bush field or backyard is extremely poor. This appears to be the factor for them to use a fixed place for defecation. Use of latrine is less in prevalent in the rural areas for the reverse situation. The literacy, religion, occupation and marital status of the urban respondents were so lopsided and variety was so limited, that there was hardly any scope for comparison or establishing relationship with use of latrine. It is even difficult to ascribe any relationship between level of income and the use of latrine from the following table (5.11).

TABLE : 5.11

Income and fixed place of defecation

Income Levels	Fixed Place	
	No	Yes
Below Tk.300	50.0	50.0
301 - 550	28.6	71.4
551 - 1000	5.0	95.0
1001 - 1500	20.0	80.0
Above 1501	33.3	66.7

It may be said that slum dwellers have got accustomed to use of latrine irrespective of income, education, marital status or occupation. In view of the relative absence of alternatives compared to villages, latrine has also become essential in the urban surrounding.

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Sufia Khatun is 35 years old Muslim housewife.

Her house is located at the eastern end of the slum. It is a pucca house. Her husband is a petty businessman and sells ready made garments. His monthly income is Tk.1500/- It is a nuclear type of family. Sufia has three sons and two daughters. Sufia is residing in this area for two years. It is a well-to-do family and respected by other slum dwellers.

Sufia collects water from a tubewell for drinking and cooking. Pond is another source for all other domestic purposes. They have one pit latrine shared by her neighbour. Sufia herself cleans and maintains this latrine. Sufia's youngest son is 4 years old. One year ago, he was attacked by blood dysentry and suffered for eight months.

There was a common belief among Sufia's family that dysentry is caused by super-natural power. Sufia came to know from her mother-in-law that a mother of baby should not go outside the homestead at the advent of dawn or dusk. Because at this time spell of evil spirit move with wind and it has an attraction towards the breast-milk of a mother. If this spirits come in contact with the mother, breast milk becomes polluted. If this impure breast milk is feeded to her child it causes dysentry.

Upon this view, Sufia went to a Mohamedan Monk and bought an amulet. She had the feelings that this amulet would spoil the influence of evil spirit and her child would be cured. But in vain. After five/six months of her child's sufferings, one of her neighbours adviced her husband to go to a modern doctor for the treatment of her child. From that doctor she came to realize that super-natural power is not the cause of dysentry. It was due to her improper cleaning habits of utensils. Sufia used to keep a water pot inside the latrine which was used for cleaning utensils as well as bathing. She cleaned utensils along with water bottle of the child inside the latrine. While cleaning it, germ of dysentry from the latrine contaminated utensils and this was the cause of the dysentry of her child.

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The doctor further stated that all of them had the possibility to be attacked by dysentry. Luckily they had escaped.

From then on Sufia does not clean utensils in the latrine and as per the doctor's advice she used to boil water before drinking it. But now she does not boil it because her child has been cured by the grace of almighty Allah, and there is no possibility to be attacked by dysentry since she does not clean her utensils in the latrine.

6.0 Health Awareness in the Study Area

One of the objectives of the study is to assess the knowledge and awareness of both rural and urban population regarding water-related diseases and to investigate their preference for health care.

Six diseases were selected namely, diarrhoea, dysentry, cholera, skin diseases, round worm and hook worm and the respondents were asked to identify the cases of these diseases. No suggestion of probable cases was made and the interviewers were free to open their mind. Responses of the rural and the urban respondents are serialised for each diseases and discussed and compared in separate tables.

6.1 Perception About Diseases

Table 6.1 gives information about diarrhoea.

TABLE : 6.1

Causes of Diarrhoea

Cause	Rural	Urban
Impure Water	-	7.5
Flies & Mosquito	9.0	7.5
Rotten Food	31.3	65.0
Improper cleaning habit, body & cloth	-	-

contd.....1.44

Cause	Rural	Urban
Improper cleaning after Defecation	-	-
Defecation in open field	-	-
Excessive Sweet eating/ spices/hot food	1.5	-
Smell from faeces	1.5	-
Indigestion & Constipation	1.5	2.5
Superstitious belief	1.5	-
Bad Eating habit	43.3	15.0
Other	1.5	2.0
Do not know	3.0	-

Rural women do not know of impurity of water as cause of diarrhoea although according to modern medical science this is primarily a water-borne disease. A few urban women (7.5) however know about impurity of water as a cause of diarrhoea, but the overwhelming majority of urban women are as ignorant as their rural sister. Very few women hold mosquito or flies responsible for diseases. Most women are un-concerned about flies. In most rural household it was observed that flies were sitting upon open food and people were eating these food with a carefree attitude.

Saliman does not care about flies sitting on the food served to children. It was found that she was serving the children in the unclean manner surrounded by flies.

Most rural (74.6%) and urban women (80.8%) consider rotten food and bad eating habit as the cause of this disease. Bad eating habit includes overeating and bad combination of food items in the meals. Eating milk and meat or meat and fish in the same meal is considered a bad eating habit. Eating frequently without reasonable gaps between meals is also considered bad.

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Shahera considers flour paste and wheat cooked with spice as food to be cause of diarrhoea and dysentry. Ameena holds same views. It may be noted here that wheat is not a traditional food in Bangladesh. Due to short supply of rice, poorer families are being forced to take wheat.

It can be easily seen that condition immediately before the outbreak of disease is considered as cause of the disease. Usually diarrhoea is preceeded by eating of rotten food or overeating. The women are therefore committing the fallacious logic that "after this, so because of this".

Dysentry is another water borne disease that is widely prevalent in the country, especially among the children. Causes of the disease as reported by the urban and rural women are reproduced in the following table 6.2.

TABLE : 6.2

Cause of Dysentry

Cause	Rural	Urban
Impure water	-	5.0
Dirty, rotten food	7.5	5.0
Excessive Sweet eating	13.4	12.5
Smell from faeces	1.5	-
Indigestion, Constipation	40.3	35.0
Bad Eating Habit	9.0	15.0
Others	3.0	20.0
Don't know 25.4	7.5	

No rural women and only 5% urban women associated dysentry with impurity of water. The largest number of both rural (40.3%) and urban (35%) women hold indigestion and constipation responsible

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for the disease. Infact these two conditions are symtoms of dysentry. The women therefore have mistaken the sysmptom for the case. A large number of rural women are totally ignorant about the case. Excessive sweeteating and eating of spicy food is considered by a sizeable number of women both rural and urban as the case. Eating of spicy food is understandable as a cause in the mind of the respondents. But the reason for associating sweeteating with dysentry is not clear.

Sufia Khatun believes that dysentry is caused by spirits.

Cholera had been a dreadful epidemic disease especially in the rural areas of the country. With the use of oral saline, incidence of cholera has decreased, but it is still a cursing disease especially for children. Table 6.3 presents the idea of women about cause of the disease.

TABLE : 6.3

Causes of Cholera

Cause	Rural	Urban
Impure water	4.5	12.5
Flies, Mosquitos	6.0	17.5
Dirty, rotten food	20.9	42.5
Smell from faeces	-	5.0
Superstitious belief	32.8	7.5
Bad eating habit	10.4	5.0
Infected by others	-	5.0
Other	-	2.5
Dont't know	25.4	2.5

There is some marginal awareness regarding impurity of water as cause of cholera among both rural and urban areas. The reason may probably be that cholera being a major health hazard in rural area, Government has from time to time organized massive

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propaganda and campaign for its prevention. It may be noted that rural women reporting impure water as cause of cholera number three and one of them is Sakina who is a midwife of the Family Planning Organization and another Banu Begum is a midwife of local hospital. As with diarrhoea the respondents make false association on the bases of "after this, so because of this". One striking feature is that substantial number of village women (32.8%) and some slum women (7.5%) ascribe cholera to superstitious beliefs. They associate this disease with mysterious events or agents. For example, Hindus believe that this disease is caused by Goddes Ula. The Hindu belief, as a socio-cultural factor, is often extended to Muslims.

> Rahima is the wife of landless labourer, She believes that spirit and soul traveling with the wind cause cholera. Shoma Khatoon and Sar Banu both rural housewives also hold the same views. Tulshi thinks that some kind of evil spirit is responsible for cholera.
>
> Acharna, a slum dweller believes that if any unchasete woman or profligateman takes bath in a pond, the water becomes unholy and people taking bath in the pond gets cholera and the other diseases as a wrath of the providence.

It is interesting to note that some women believe that impure water is not the cause of diarrhoea/cholera.

> Wife of Agar Ali claims that she or members of her family have never suffered from stomach ailment although they have alalong drank dugwell water. On the other hand she reported that among people who take tubewell water suffer from such illness. Shomola also expressed same views. From experience she has thus come to the positive conclusion that water has nothing to do with these illness.
>
> Shohagi - a slum dweller, believes that smell of human urine and faeces is the cause of water-borne

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diseases like cholera and diarrhoea. She is of the opinion that since women wash the dirty linen of the children under the tubewell, the diseases originate from the tubewell.

Scabies is the main type of skin disease and children are the main victims. The response of the respondents is tabulated in Table 6.4.

TABLE : 6.4

Causes of Skin Diseases

Cause	Rural	Urban
Impure water	3.0	5.0
Improper cleaning habit,body & Cloth	62.7	47.5
Superstitious belief	9.0	-
Infected blood	7.5	20.0
Infected by others	-	22.5
Other	1.5	-
Don't know	16.4	5.0

A majority of the rural respondents and the largest number of urban respondents cite cleaning habits to be the cause of skin diseases. Cleaning here refers to cleaning of the body and clothes. Local people usually take bath in unhygienic water. In the village Indrabelta, a number of latrines are situated by a ditch. The water is kneedeep at the time of interview (first half of the total time) and the faeces of the latrine fall into the water making the water dirty and polluted with stool. At the time of the study, women and young children were found taking bath in this ditch. Slum dwellers take bath in a stagnant ditch where sweeper cleans the pot in which they carry the stool and the broomsticks with which they clean the latrines. Dirty linen of children are also washed in the ditch and domestic filth is also dumped in the ditch which continuously emits

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bad smell. Adults wash the hands with water only after defecation. Very few children ever wash themselves properly.

> Priyabala's 6 year old child plays with mud and cow dung and paints his body with the materials. Her mother sitting nearby is unconcerned.
>
> Samiran's two sons came to their mother for food. Their body was covered head to foot with mud. Their mother served them food in that condition and they ate with their soiled hands.
>
> Anju Fakir's wife is not aware of cleanliness. Children take food with dirty hands and their noses are running and she does not take any step to clear the nose.

Cleaning habits of both adults and children can not therefore be considered proper or satisfactory. On the one hand, they indulge in most unclean habits and on the otherhand they are aware that unclean habits cause skin ailments. These two positions are difficult to reconcile unless we take into consideration the compulsion that most families have no alternative and have to accept the situation willy nilly. Some rural and urban women cited infected blood as cause of skin disease. What they meant is the folk medical belief, that blood sometimes become impure and polluted and such impure blood causes disease. How the blood becomes impure is not however clear. A good number of urban respondents reported that skin disease is caused by contact with infected people.

> Zarina has seen from experience that poison in the skin disease is transmitted to healthy body through contact and manifests itself in rashes on the healthy skin. What the women are infact describing is how the disease is spread and not how it is caused.

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Superstition is also associated with skin diseases.

> Galemon, a rural housewife has learnt from doctors that unclean body invites skin trouble, but she personally believes that smearing the mud floor with cow dung is the real cause of skin disease. She narrates that mud floor of the lying in room is by custom smeared every three days. In smearing the floor cow-dung is sometimes mixed with the mud. Skin disease occurs if the floor is smeared with mud-cum-cow-dung. As proof she cites her own case and claims that she had always smeared her floors with mud only and all the three children she has are free from the skin diseases. On the otherhand, she points out that, all children of the neighbourhood are suffering from skin ailment as her floor was smeared with cow-dung and mud.

Roundworm is a common afflication of children in the country. Almost all children suffer from round worm infection at some time of their life. The respondents had different ideas about its cause as Table 6.5 shows.

TABLE : 6.5

Cause of Roundworm

Cause	Rural	Urban
Improper cleaning habit,body & Clothes	1.4	17.5
Improper cleaning after defecation	-	2.5
Excessive Sweeteating Spicy hot food	73.1	65.0
Indigestion,Constipation	1.5	-
Bad eating habit	10.4	-
Other	-	5.0
Don't know	10.7	10.0

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The majority of both rural and urban respondents think that excessive eating of sweet and spicy hot food causes round worm. Customarily it is prescribed in this country that children should not be allowed to eat too much sweet to keep them free from round worm. Some respondents who believe in the general precept were at a loss to find that their children do suffer inspite of the fact that they do not take sweet.

> Amjad Ali's son was suffering from roundworm at the time of interviews. His wife asked the interviewer as to why her son was having round worm although the family did not have enough money to give the child sweet. It was,however, observed that her children were eating bread with dirty hands. All the children were covered with muddy water but mother was not eager to clean them before giving them food.
>
> Hamela's son ate sweet potato without washing dirty hands. After eating, he drank water from the pot which is used for washing after defecation.
>
> Razia Khatoon collected cowdung fuel for the kitchen. But without washing her hands she began eating rice and bread along with her children.

In 89% of respondents' families hands are washed only with mud and water after defecation. Many villagers wipe hand in their clothes after defecation. In urban households 62.5% of the respondents wash hands with mud and water. Very few respondents use soap for washing hands after defecation. They are not aware that this how round worm is spread. Since they do not take the precaution that is necessary for prevention of round worm, the children of the poor families continue to suffer inspite of the fact that their parents can not afford to give them enough sweets.

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Hookworm is a wide-spread disease with children. But this is usually identified with round worm in popular notion. Following are the impression of respondents about its cause. See Table 6.6.

TABLE : 6.6

Causes of Hookworm

Cause	Rural	Urban
Dirty, rotten food	-	2.5
Improper cleaning habit,body & clothes	6.0	10.0
Excessive sweeteating , spicy hot food	3.0	50.0
Indigestion,Constipation	-	5.0
Bad eating habit	-	5.0
Other	7.5	2.0
Don't know	83.6	25.0

Majority of the rural respondents (83.6%) and a good number of urban interviewers (25%) do not know the cause of hookworms, probably because the disease is not distinctly identified. Among urban respondents 50% identified the cause as eating excessive sweet and spicy hot food. This is because the disease is often thought of as round worm.

The evidence of the respondents reveal that both rural and urban women are ignorant of modern medical science. They have no knowledge of scientific explanation of water-borne disease. They tend to subscribe to folk and traditional medical beliefs irrespective of whether they live in the village or in the slum. Due to their ignorance they do not take adequate precaution against these diseases.

One essential fact has not come out clearly from the evidence. This is the ultimate cause of diseases. Most causes mentioned by the respondents are associated with the diseases either as a symptom or precondition. It has been found in several studies

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that in popular belief, all diseases are ultimately attributed to divine will. A study of three villages in Tangail district in June 1981 found that, "both Muslims and Hindus, rich or poor, believe that diseases occur according to the will of God". (June 1981). Mahmuda Islam found in her study "Beliefs and Practices About Female Disease in a Bangladesh Village" (1982) that causation of disease in the traditional Bangladesh has two elements - one ultimate and another immediate. All diseases are ultimately caused by divine will, but are manifested in immediate causes like rotten food, evil wind, etc. In understanding the perception of disease causation by the respondents this essential element must be clearly appreiated.

6.2 Source of Perception

The perception of the respondents about the causes of water-borne diseases follows from the source of their knowledge about disease causation.

Very few respondents had the opportunity of knowing about diseases from the doctors as the Table 6.7 shows.

TABLE : 6.7

Doctors as Source of Knowledge about Disease Causation

Disease	Rural	Urban
Diarrhoea	2.5	-
Dysentry	5.0	1.5
Cholera	-	3.0
Skin disease	7.5	3.0
Round worm	5.0	4.5
Hookworm	5.0	-

Urban women who are expected to have better access to modern physician are not far better than their rural sisters. Needless

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to say that having no contact with doctors, the respondents are not likely to know the modern medical explanation of diseases.

Very few respondents learnt about the diseases from books. This is understandable in the context of illiteracy among the respondents.

Respondents' perception of diseases came from experience mainly. Table 6.8 reveals that majority of the women have explained disease causation from their own experience.

TABLE : 6.8

Experience as source of knowledge about Disease Causation

Disease	Rural	Urban
Diarrhoea	67.5	82.1
Dysentry	72.5	59.7
Cholera	60.0	23.9
Skin disease	65.0	58.2
Round Worm	32.0	31.3
Hook worm	27.5	33.3

Confusion of symptoms and circumstances with case has arisen because of reliance on own experience. In observing a case, the respondents are normally likely to observe the situation preceeding and the symptom accompanying the onslaught of the disease. That is why rotten food eaten on the previous day is considered the cause of diarrhoea and the constipation is associated with dysentry.

> Amiran of village Indrabelta had attack of diarrhoea several times and each time the attack was preceeded by overeating or eating rotten fish. She is therefore convinced that overeating or eating rotten fish is case of diarrhoea.

There are cases where experience is given more weight than doctors' opinion. Galemon did not like doctor's view on skin disease. She has observed that children of mothers who smeared floor with water and cowdung got skin rash and she gives more weight to her observation.

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Next to experience, the main source of information is relatives, friends, and neighbours. These sources are tabulated as "people" in Table 6.9.

TABLE : 6.9

People as the source of information

Disease	Rural	Urban
Diarrhoea	14.9	10.0
Dysentry	13.4	10.0
Cholera	47.8	22.5
Skin disease	20.9	22.5
Round worm	52.2	45.0
Hook worm	9.0	37.5

A large number of rural and urban respondents learnt about cholera from other people probably because incidence of cholera is gradually diminishing and many respondents have no first hand knowledge. Majority of rural women learnt about round worm from the people, although this is a common disease in all households.

It may be pointed out that respondents were not asked to explain the reason why they consider a particular factor responsible for the disease. In the case of round worm the majority repeated sweeteating as the cause. But in the poor household, children do not get enough sweets to eat and yet they get round worm. Experience of the mothers does not therefore, suggest relationship between sweeteating and round worm. As they know of no better explanation, the respondents have to depend on the people's views.

It will be relevant to mention that the respondents, did not learn about these diseases from the extension workers or health workers. There are health education workers for the slums and the village. Either these extension workers failed to convince them or they did not do their job. The actual reason why health education failed to produce any impact will be a fit subject for further investigation.

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6.3 Measures for Prevention

Knowledge about disease prevention is a pre-requisite for taking effective means for prevention. Since most respondents have inadequate and fallacious knowledge about disease causation, they are not likely to take effective means for preventing the diseases. For example, only 9.0% rural and 7.5% urban respondents considered tubewell water or pure water a means to prevent cholera, although this disease is primarily a water-borne disease. No rural respondents attach any importance to pure tubewell water as a preventive measure against diarrhoea, dysentry, skin diseases, round worm and hookworm. In the urban slum, the situation, though far from satisfactory is somewhat better. A marginal section of urban respondents consider tubewell/pure water as means of preventing diarrhoea (5.0%), dysentry (5.0%), skin diseases (2.5%), round worm (15%) and hook worm (2.5%). The overall situation must be viewed with alarm so far as control and elimination of these wide-spread diseases in Bangladesh as are concerned.

Preventive medicine does not find favour with respondents, both urban and rural. Only 1.5% rural respondents favour it for preventing round worm. This type of medicine is not at all taken into consideration for other diseases by rural respondents. A negligible number of respondents cite such medicines as preventives for diarrhoea (2.5%), dysentry (5.0%), skin diseases (2.5%), and hook worm (5.0%). Even urban respondents do not prefer preventive medicine against cholera.

Preventive medicine in the above context seems to refer to allopathic medicine. Although this is not clarified by the respondents, presumption may be made in view of the fact that some women have specifically referred to folk medicine as means of prevention. Some rural women consider folk medicine as a preventive for dysentry (3.0%) and round worm (3.0%). Some urban respondents thought that folk medicine may prevent dysentry (2.5%), skin disease (5%), round worm (2.5%) and hook worm (5.0%).

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In line with their idea about disease causation, the respondents emphasize mainly proper food, cleanliness and avoidance of infected persons as means of preventing these disease. For example, rural women mainly suggest good and fresh food (25.4%), not eating rotten/ excessive food (26.9%) and maintaining regular food habit (29.9%) as the means for preventing diarrohea. Urban women suggest good and fresh food (22.5%), and not eating rotten/excessive food (47.5%) as best preventives for diarrhoea. As regards round worm, 68.7% rural and 50% urban respondents suggest avoiding excessive eating of sweets as a preventive measure.. A large number of urban (50%) and rural (73%) respondents believe that skin diseases may be prevented by personal cleanliness including use of soap.

Many rural respondents do not know and hence do not take any preventinve measures. Number of such ignorant women is comparatively low among urban respondents. Table 6.10 presents the number of respondents who do not know about preventive measures.

TABLE : 6.10

Respondents who do not know about preventive Measures

Disease	Rural	Urban
Diarrhoea	6.0	5.0
Dysentry	28.4	10.0
Cholera	35.8	2.5
Skin Disease	26.9	7.5
Round worm	11.9	5.0
Hook worm	-	-

Urban women have greater mobility and wider access to information than rural women. Within the rural sector, poorer women who are comparatively free in movement and activity tend to have better knowledge than the women of higher income group who are relatively domesticated.

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Surjaban's husband is landless with eight dependents. Surjaban has to supplement family income by working in richer households on wage basis. She has no tubewell in the household and has to go to a neighbour's house for collecting tubewell water. The owner of the tubewell behaves rudely and occasionally takes her to task for drawing water from his tubewell.

Inspite of the ignoring to which she is subjected, Surjaban continues to fetch water from the tubewell and does not go to river or pond because she has learnt from various sources that drinking of river water may cause cholera. She has also learnt from people outside her home that water can be made germ free by boiling.

In general means of prevention formed by the respondents are in line with their beliefs about disease causation. As a result such basic preventive measure like drinking pure water has been ignored by the most of the respondents.

6.4 Preference for Treatment

Respondents were asked what type of treatment they take or will take in case of different illness. They were given the option to choose one type out of three types of medical systems, namely, folk, homeopathy and modern. The majority of respondents, both rural and urban reported that they take or will take modern treatment. The following table No.6.11 supplies the information.

TABLE : 6.11

Type of treatment taken or will be taken for different disease

Diseases	Rural			Urban		
	Folk	Homeopath	Modern	Folk	Homeaopath	Modern
Diarrhoea	31.3	-	68.7	22.5	20.0	57.5
Dysentry	44.8	-	55.2	25.0	15.0	60.0
cholera	3.0	-	97.0	-	2.5	97.5
Skin disease	34.3	-	62.7	27.5	10.0	62.5
Round worm	25.4	-	74.6	5.0	20.0	72.5
Hook worm	10.4	-	47.8	5.0	15.0	65.0

contd...1.59

Note: All the cases do not add upto 100 as some respondents reported not to know what type they use or will use.

Modern treatment is almost exclusively used for cholera. This is because of the propaganda launched by Government and non-Government Organization and cheap and easy availability of oral saline preparations. Rural respondents, as a group do not use Homeopathic though it is much cheaper than modern medicine. The only reason can be nonavailability of the system in the two villages.

There seems to be an inconsistency between the information regarding medical treatment used and the information regarding knowledge about disease causation, source of such knowledge and means of prevention. The high majority of both rural and urban respondents reported to have used or will use modern medicine. But only a negligible minority have shown any knowledge of purity of water as a cause and preventive measure. What is more only few have derived their knowledge from doctors. If majority of the women were in touch with modern medicine, they are expected to know or be told by the doctors about cause and prevention. Going to scientific treatment but not knowing of scientific side of the disease seem to be contradictory.

This contradiction has arisen due to the fact that in many cases information derived from the respondents is not first hand. At the time of interview there might not have been any patient of the selected diseases in the households. The respondents might not have come across such diseases so far in her life. Many respondents therefore, have no direct acquintance with the diseases. These respondents must have dependent on their individual attitudes and on-the-spot judgement.

The respondnets were asked and reported on type of treatment for one disease. This may create the impression that respondents use one specific type of medicine for one particular disease to the exclusion of other types of treatment. This is not correct. Rural households

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use a number of types of treatment for the same patient suffering from one disease. A medical sociological research done in three villages in Tangail found that there is a trend to start with a home remedy, after which people may keep on shifting from one care system to another changing pratitioners on the way until some relief is achieved. Same finding emerge in the study, 'Folk Medicine and Rurl Women in Bangladesh'(Mahmuda Islam - 1980) which has further found that several types of treatment are also applied at the same time on the same patient. The finding in the present study must therefore be corrected in the light of above evidence.

In the study villages many families use several types of medicine for the same disease.

> Khuki, wife of Nayeb Ali takes folk treatment first as this is inexpensive. If no improvement is attained, she considers modern treatment.
>
> Rizia had an attack cf skin rashes and resorted to modern medicine. But it did not bear fruit. She then tried folk medicine and claims that she is completely cured now. On the otherhand, Maimuna tried folk treatment and also Ayurvedic medicine for her daughter, but was in vain. She then shifted to modern medicine and her daughter was cured of dysentry.

In some cases several types of treatment were administered simultaneously. Youngest son of Momina was suffering from eczema. Father of the child brought modern medicine from hospital. At the same time grand mother continued to apply folk treatment. Moyna is taking modern medicine for her dysentry. But as her uncle is a folk healer she cannot avoid taking medicine prescribed by uncle. She therefore takes both types of medicine.

Basic truth is that all women want recovery and cure and seek out the most effective treatment. They are keen to use the effective

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treatment unless deterred by cost. It will be seen that effectiveness is the main reason for choice of a particular treatment by both rural and urban women. Table 6.12 illustrates the reason for choice of treatment.

TABLE : 6.12

Reason for Choice of Treatment

Disease	Rural		Urban	
	Less Ex pemsive	Most Effec-tive	Less expensive	Most effective
Diarrhoea	23.9	73.1	22.5	62.5
Dysentry	28.4	71.6	15.0	70.0
Cholera	1.5	98.5	5.0	75.0
Skin disease	22.4	74.6	20.0	67.5
Round worm	22.4	77.6	15.0	70.0
Hook worm	7.5	49.3	12.5	60.0

Further information reveal that modern treatment is taken for its effectiveness while folk medicine is chosen for its relative low cost. Rural respondents'own assessment is given below regarding diarrhoea, dysentry and cholera as test cases in Table 6.13.

TABLE : 6.13

Reasons for selecting treatment of Diarrhoea

Treatment	Less Expensive	Most Effective	Easy to use
Folk	76.2	23.8	-
Modern	-	95.7	4.3

Folk medicine is primarily used in diarrhoea for its relatively low expensive. However, some respondents consider it most effective for treating diarrhoea.

In dysentry, the similar trend is visible as shown in Table 6.14.

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TABLE : 6.14

Reasons for selecting treatment for dysentry

Treatment	Less Expensive	Most effective
Folk	63.3	36.7
Modern	-	100.0

In cholera 98.5% of the rural women opted for modern medicine for its most effectiveness. Of the few women who used folk medicine 50% of them selected this type due to low cost.

The above evidence shows that although modern medicine is generally considered most effective, folk medicine is not without adherents who consider this system most effective. However, efficacy of the treatment is not the only consideration for the selection of the type of treatment. Many respondents make their choice on consideration of the cost. Since it is less expensive and is also considered as most effective by a section of the rural women, folk medicine will continue to prevail and can not be supplemented by modern medicine. Some finding applies to urban respondents who still adhere to folk medicine. This may be shown by the test case of diarrhoea in table 6.15.

TABLE : 6.15

Reasons for choice of treatment for diarrhoea

Treatment	Less expensive	Most effective	Other
Folk	22.2	66.7	-
Homeopathy	62.5	12.5	25.0
Modern	8.7	78.3	12.9

The two villages seem to differ from the general situation obtaining in most villages that folk medicine still dominates the rural medical science. This unique situation in the study villages should be explained by their relative accessibility to urban influence. The two villages are within 8 kilometres of Tangail town. In the town there is a government hospital where treatment

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is supposed to be free of cost. Moreover these villages have the opportunity of availaing of the services of the private physicians at Tangail. There are also pharmacies at hand for buying medicine. The fact is that villagers are not rigid or obstinate in the matter of diseases. They are ready to test any medical system provided it is available and effective and within their means.

In order to test attitude of the respondents on health facilities like tubewell and latrine the respondents were asked to indicate their priorities in any expenditure scheme. No rural respondent gave first preference and not even second priority to tubewell and latrine in their spending scheme. Third preference was given to tubewell by 9.0% and to latrine by 3.0% rural respondents only. Urban respondents seem to have better awareness and appreciation of health facilities. First preference to tubewell and latrine was given by 2.5% urban respondents. Second preference went to 2.5% of respondents in respect of tubewell and 5% in respect of latrine. On the whole, average rural and urban respondent is not conscious of the benefits that may occur from tubewell and latrine and consequently they are not keen to spend money on these two basic items of health and sanitation. In the environment and socio-cultural atmosphere in which the rural people live, it is no wonder that land (40.3) and construction of house (28.4) enjoy the topmost priority in any expenditure scheme of the rural respondents. It may seem strange that even urban respondents give top priority to land (.35%) and construction of house (40%). These people live in unbearable condition in the slum and are always pestered by the landlord. They therefore cherish the desire to acquire a piece of land in which they may build their own residence.

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7.0 Conclusion and Recommendation

Present study was conducted on a few selected samples in a limited area. Generalization may not therefore be accurate. Recommendations should be understood keeping in view the limiations of the study. However, as far as practicable, the study was conducted with a free mind and without any assumed hypothesis.

The study found that the responsibility of collecting of water and its distribution within the household rests with the women in the slum as well as in the villages. Water is mostly carried by women from outside the house and in earthen pots. In cases they have to walk upto 200 metres for collecting water.

Women procure water from different sources; but tubewell is generally preferred for drinking. Many factors, namely purpose of the use, distance of the source from the place of use, quantity of water required, freedom of use of the water source as well as socio-cultural environment may contribute to the selection of the water source, but the instant study could not pin point the actual reason or the relative importance attached to these factors by different categories of the users.

Factors like education, household income and occupation do not seem to have any association with the choice of water source.

Choice of water source is significantly different in the slum from that in the villages. Such difference seems to emanate from the difference in the physical layout of the village and the slum.

Distribution of water is not uniform throughout the village. Many households find it difficult to get adequate quantity of water from the desired source. Distance to source is a problem felt by both slum dwellers and villagers. But the users on the whole do not have any complaint about the quality of the water. They are not aware of the relationship between contamination of

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of water and incidence of water-borne diseases. They also do not feel the need for treatment of water in order to make it germ free. Those who drink water from source other than tubewell do not usually subject it to any purification process. A minority of such users, however, take crude filtering device to remove the dirts and sand particles. Water is not boiled to make germ free. It may, however, be said that attitude of both rural and urban women is favourable to extensive use of tubewells for various purposes.

Women are not knowledgeable about water borne diseases. They however do possess some kind of perception about causes and prevention of these diseases. Their perception is not based on scientific inquiry and more often than not reveals fallacious logic. The reason is that they have acquired these notions mostly from experience and secondarily from relations, friends, and neighbours. They do not have the benefit of learning the truth either from the doctors or from the health education officils.

Women are not rigid in their attitude towards different types of treatment and are not bound by any traditional preference for folk medicine. The guiding principle of selecting a particular type of treatment is its effectiveness and cost. Modern treatment is considered most effective by a large number of households while some households consider folk medicine most effective. The usual pattern of behaviour is that folk medicine is considered good for certain purposes and modern medicine is considered good for some other purposes. In the circumstances both rural and urban families try different types of medicine depending on effectiveness and cost of different systems. In short, both modern and folk medicine subsist side by side as medical options available to the people.

People show a tendency to use a fixed place for defecation. However the percentage of users of a fixed place is higher in the slum than in the village. The reasons seem to be that due to the congested surrounding of the slum, a fixed place for defecation becomes almost a necessity. On the otherhand, villagers do have

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alternatives to latrine. Villagers, however, are becoming increasingly aware of the greater convenience and advantage of a fixed place. Rural households therefore show preference for latrine, provided land is available and the cost of construction is within their means. Villagers are however motivated to have a latrine for reasons other than hygiene. They are not conscious of the sanitational requirement for the latrine so that most latrines are unclean and unhygienic. As a result tubewell and latrine have a low priority in their expenditure scheme.

Recommendations

Previlaing situations as revealed from investigation call for improvement. Steps may be undertaken keeping in view need and desire of the people.

1. Adequate supply of pure drinking water is an urgent need. Steps may be undertaken to provide tubewell for the adequate supply of water. Distribution of the tubewells should be such that everyone gets easy access to it. Location needs to be selected after proper assessment of the people' views. Following measures may be considered in this connection.

a. The village may be divided into convenient units and tubewells may be distributed to cover all these units.

b. In order to make people more concerned about tubewell, those using a particular tubewell, should be required to pay for the installation and maintenance of the pump. Rate of payment should, however, be nominal, but such as will create awareness of the users about its proper and common use.

Since people usually prefer a fixed place to open space for defecation, arrangement may be made to develop such habit through proper distribution of latrine in the slum as well as in the village.

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Well-to-do households may be encouraged to get latrine for individual family. Bank loan may be arranged for the purpose. For relatively poor people a few community latrines may be built. Distribution of community latrine in different units depending on the needs and condition will improve the situation. A small sewerage cess may be levied by the union parishad for the maintenance of the latrine.

Mere distribution of tubewell or latrine may not solve the problem; users must be made aware of the utility of these facilities so that they show interest in the maintenance of these services.

Motivation education is, therefore, of immense need. Since people are not knowledgeable about water-related problems and sanitation; and at the same time they are not hostile to news ideas and learning, a Health Education Programme may be initiated on experimental basis. The programme needs to be designed to educate people about basic health and sanitation and to impart knowledge about water related problems and their solution.

Attempt should be made to impart knowledge through simple messages; Message may be framed on the following items:

a. contamination of water and its consequences;
b. means to keep water germ free,
c. value of keeping defecation place clean; and
d. need to be cleaned properly after defecation.

Health education may be imparted by Health workers. Selection of the workers should be done carefully. They should preferably be woman and from the community.

Since women are responsible for the supply of water and maintenance of latrine, health education should begin with them. Health workers therefore need to be women.

Training for the health worker is essential. They should have proper training and should be provided with adequate incentives to serve the community.

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Union Parishad should be actively involved in the whole process. N.G.O. if any operating in the area, may also be associated.

A Health and Sanitation Committee may be set up in every union for promoting tubewell and latrine facilities. This Committee should be responsible for selecting proper location of the tubewell and may coordinate with relevant agency for supply of tubewells. The committee should also select the site of communal latrine. It should have the responsibility of supervision and maintenance of tubewell and communal latrines.

Committee members should be selected by the inhabitants of the area, from among themselves. There should be proper representation of the landless in the committee.