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HOUSEHOLD SURVEY REPORT

(Prevalence of Diarrheal Disease in Jacobabad)

MDC
Management and Development Centre
(Private) Limited

Prepared by: Management & Development Center (MDC)
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5th July, 2021

To,

The Program Director
Program Management Unit (PMU) – Sindh MSDP
Planning & Development Department
Government of Sindh, Karachi
D-18 Block 2, Kehkashan, Clifton, Karachi

SUBJECT: SUBMISSION OF HOUSEHOLD SURVEY REPORT (PREVALENCE OF DIARRHEAL DISEASE IN JACOBABAD) FINAL DEVELOPED UNDER LGSA PROJECT, MSDP.

Dear Sir,

We are thankful for your approval of Household Survey Report (Prevalence of Diarrheal Disease in Jacobabad) during the Quality Assurance Committee (QAC) meeting held on June 25, 2021.

We are pleased to submit final version of this report for your record

We will be glad to provide any additional information if required.

Looking forward to cooperating with you.

With Best Regards,

Avais Ahmed Memon
Chief Operating Officer
Management & Development Center (MDC)
Focal Person (LGSA), MSDP

Cc to:

- Director General (Works), PMU-Sindh MSDP, Karachi.
- Director (Reforms), PMU-Sindh MSDP, Karachi.
- Deputy Director (Reforms), PSU- Sindh MSDP, Jacobabad
- Assistant Director (Reforms), PSU-Sindh MSDP, Jacobabad.
- Office Record.

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ABSTRACT

Diarrhea kills 2,195 children every day, in Pakistan up to 350,000 children die of diarrhea every year before reaching their 5th birthday. Pakistan is in top five countries, being one of them, according to Dr. Zulfiqar Bhutta from Aga Khan University. Diarrhea remains a major cause of mortality in children under 5 years of age in Sub-Saharan countries in Africa. Risk factors for diarrhea vary by context and have important implications for developing appropriate strategies to reduce the burden of the disease. The objective of this study was to assess the prevalence of diarrhea. and associated risk factors among children under 5 years of age in Jacobabad city, located in Sindh Province of Pakistan. A community-based cross-sectional study was conducted among 1456 randomly selected households with at least one child under 5 years of age. A questionnaire was used for collecting information on socio-economic characteristics, environmental hygiene and behavioral practices, and occurrence of diarrhea among children under 5 years of age. This study demonstrated that diarrhea Prevalence was relatively high among children under 5 years of age compared with other age groups residing in Jacobabad city, located in Sindh Province of Pakistan. Efforts to reduce childhood diarrhea should focus on improving household sanitation, personal hygiene, and child birth spacing.

Keywords: Diarrhea; Prevalence; Children under 5 Years; Jacobabad; Cross-Sectional Study.

1. INTRODUCTION

Water is life and access to safe drinking water is everyone's right irrespective of social and economic situations. Waterborne diseases are endemic infectious diseases of the world mainly affecting the stomach and the gastrointestinal tract. Worldwide as per estimates, 1.7 million deaths each year occur due to unsafe water, sanitation, and hygiene mainly through infectious diarrhea and nine out of ten such deaths occur in children, all happen in the developing countries. Water-borne diseases are the most prevalent infectious diseases in the developing countries. In Pakistan, more than 38 million people deprived of safe drinkable water and around 1/3 (51 million) country population has no access to improved sanitation[1] . In Pakistan, waterborne diseases are typhoid, giardiasis, intestinal worms, diarrhea, cryptosporidium infections, and gastroenteritis. Infant deaths caused by water-related diarrhea are 60% in Pakistan according to International Union on Conservation of Nature (IUCN) report, which is the highest ratio in Asia[2].

[1] Khan FJ, Javed Y (2007) Delivering access to safe drinking water and adequate sanitation in Pakistan. Pakistan Institute of Development Economics

[2] Daud MK, Nafees M, Ali S, Rizwan M, Bajwa RA, Shakoor MB, Arshad MU, Chatha SA, Deeba F, Murad W, Malook I. Drinking water quality status and contamination in Pakistan. BioMed research international. 2017;2017.

[3] Dr. Zulfiqar Bhutta from Aga Khan University

2. LITERATURE REVIEW

In Pakistan up to 350,000 children die of diarrhea every year before reaching their 5th birthday. Pakistan is in top five countries, being one of them[3], Safe drinking water is everyone's right irrespective of social and economic situations. Waterborne diseases are endemic infectious diseases of the world mainly affecting the stomach and the gastrointestinal tract.

The World Health Organization estimated that about 1.1billion people lack access to improved drinking water and many more drink water that is grossly contaminated [11]. Also 1.8Million people die every year from diarrhea disease the vast majority children under five. Studies examining water contamination show that safe storage can be an effective barrier toward prevention of diarrhea diseases.[10], however another study [12] found that it was not enough to prevent occasional extreme contamination of drinking water. With regards to Point of Use (POU) water quality evaluation, four studies of flocculent-disinfectant measured compliance through product consumption [7] reported the biggest impact on diarrhea. Studies on POU flocculants-disinfectant on reduction of diarrhea through a case control study. They found a big impact on diarrhea approximately 70% reductions as compared to controls. This reduction was attributed by high compliance rate of refugees which was around 85%.[5] Examination of bias in POU water treatment trials, finding zero impact across five placebo controlled trials, three of which were conducted in developing countries they concluded that there is no enough evidence for widespread promotion of household water treatment [9] Some evidence linking the length of trials to reduced effectiveness of water chlorination intervention. In this report the issue of sustainability of the technologies should be considered when evaluating their effectiveness. There is therefore a considerable controversy as to the scalability of the water quality interventions as well as the need for better understanding of what determine use and performance in the long term 1.14 In Rwanda it was found that low contamination in water measured at source but significantly higher contamination levels at Point of use, also another study found a substantial contamination in household water compared to source water arguing that the 10 recontamination is due to both household collection of water from multiple water sources and partial recontamination of water in transport and storage [13], [14] A meta-analysis of 32 studies supports the findings that water treatment at the point of use (POU) particularly flocculation or disinfection is more effective in reducing risk to diarrhea disease than water source improvements [4] Three meta-analysis examine the impact of hand washing on diarrhea risk analyzed 17 studies and found that hand washing hygiene reduces the risk of diarrhea by 50% 19 The World bank independent evaluation Group (IEG 2008:17) concluded that though there is evidence on improvement of health outcome due to hand washing, sanitation and point of use water treatment there is no health gain for water treatment at the source. Interventions to improve water quality particularly when deployed at the household level are effective means of preventing endemic diarrhea diseases, a leading cause of mortality and morbidity in developing countries. The laboratory assessment of gravity fed ultra - filtration water treatment device at moderate turbidity of (15NTU) the device achieved log10 reduction values of 6.9 for

Escherichia coli 4.7 for MS2 Coli phage and 3.6 Cryptosporidium oocyst thus exceeding levels established for microbiological purifiers [8] The biosand filters (BSF) is a promising household water treatment technology used by more than 500,000 globally. Randomized study in 2009 to measure the effectiveness of biosand filters in reduction of diarrhea during 6 months period in which 75 BSF households had significantly improved drinking water quality on average as compared with 79 control households.

3. METHODOLOGY OF THE STUDY

It is a cross-sectional study to assess the status of prevalence of Diarrheal diseases within the jurisdiction of municipal committee Jacobabad through a quantitative survey. Though the municipality is working towards improvement in service delivery of basic services including safe drinking water and improved sanitation services. But still there are the milestones that Municipal Committee Jacobabad has to achieve.

1.1 Objectives

To assess the prevalence of diarrheal diseases among people residing in Jacobabad city.

1.2 Other Outcomes of the Study

The quantitative tool will be designed around the following sections to give rich information surrounding the survey:

- Socioeconomic status of Respondent
- Size (average) of family
- Type of water being consumed
- Type of latrine being used
- Number of persons who had diarrhea (in last two weeks)
- Number of children under 5 years, who had diarrhea (in last two weeks)
- Number of people who recovered well without medication (in last two weeks)
- Number of people who recovered with medication (in last two weeks)
- Number of people who recovered with medication and admitted in hospital (in last two weeks)
- Suggestions for improvement for service providers
- Any other suggested by PMU

1.3 Data Collection Tool

A structured questionnaire was used with the approval of PMU-Municipal Services Delivery Program.

1.4 Sampling Strategy

A simple random sampling method is adopted so that all the residents of Jacobabad City should have an equal opportunity to participate in the study.

Sampling Size: Sample size is calculated on standardized statistical formula

$$n = P (1\text{-}P \div e^2)$$

The sample size calculated is 336

1.5 Data Collection Team

Data collection field team (Surveyors) were hired locally from Jacobabad and 2-Days training was imparted to them.

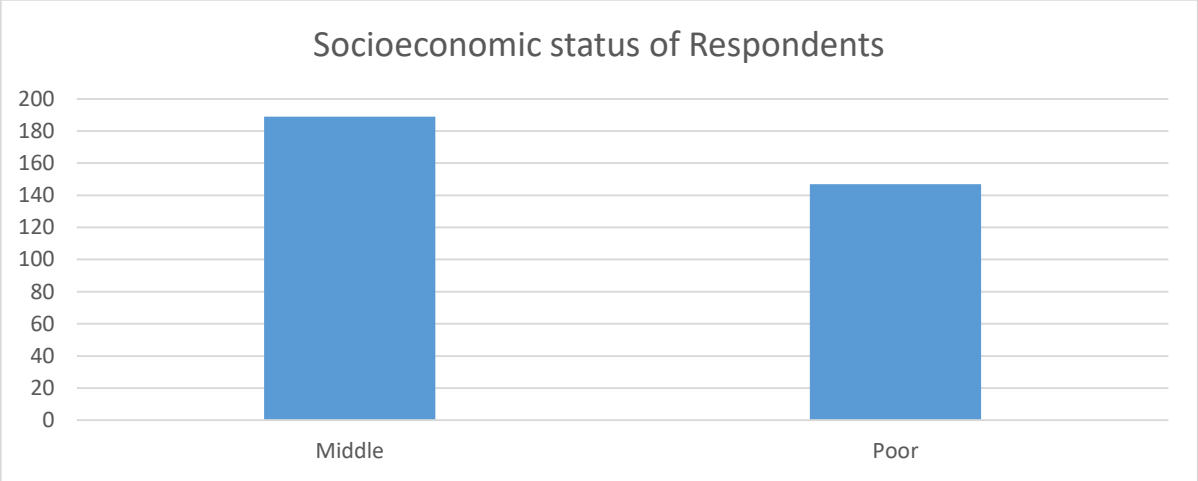
1.6 Data Analysis

Carried out by using SPSS Statistical Package for Social Sciences (SPSS).

4. Results / Findings

4.1 Socio-Economic Status

56% respondents belong to middle class, 44% belong to Poor socioeconomic class. The graph given below shows the graphical presentation of the respondents.



4.2 Size (Average) of Family

The averagely family comprises of 8 people, out of them; Male and female ratio is 4:4 i.e. Male: 4, female 4. While Under 5 years are 2, Under 50 years are 5 and Above 50 are 1, averagely.

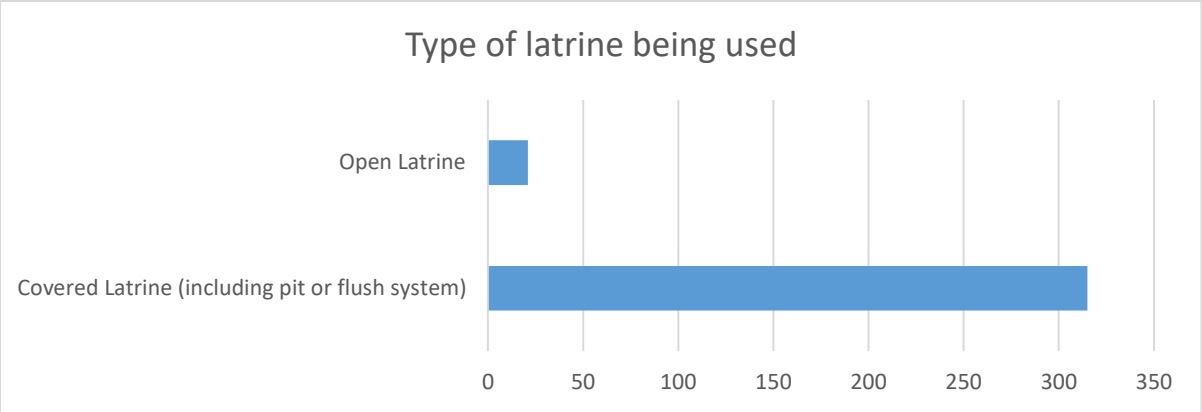
4.3 Type of Water Being Consumed

All the respondents selected randomly are using water taken from open source

4.4 Type of Latrine Being Used

94% use Covered latrine (pit or flush system). While 6% do not use covered latrine.

The graph given below shows the graphical presentation of the respondents.



4.5 Number of Persons Who Had Diarrhea (In Last Two Weeks)

Only 3% had diarrhea in the last two weeks.

4.6 Number of Children Under 5 Years, Who Had Diarrhea (In Last Two Weeks)

The 3% were the children under five years those had diarrhea in the last two weeks.

4.7 Number of People Who Recovered Well Without Medication (In Last Two Weeks)

No one of the recovered without medication.

4.8 Number of People Who Recovered with Medication (In Last Two Weeks)

All the 3% recovered with medication at home.

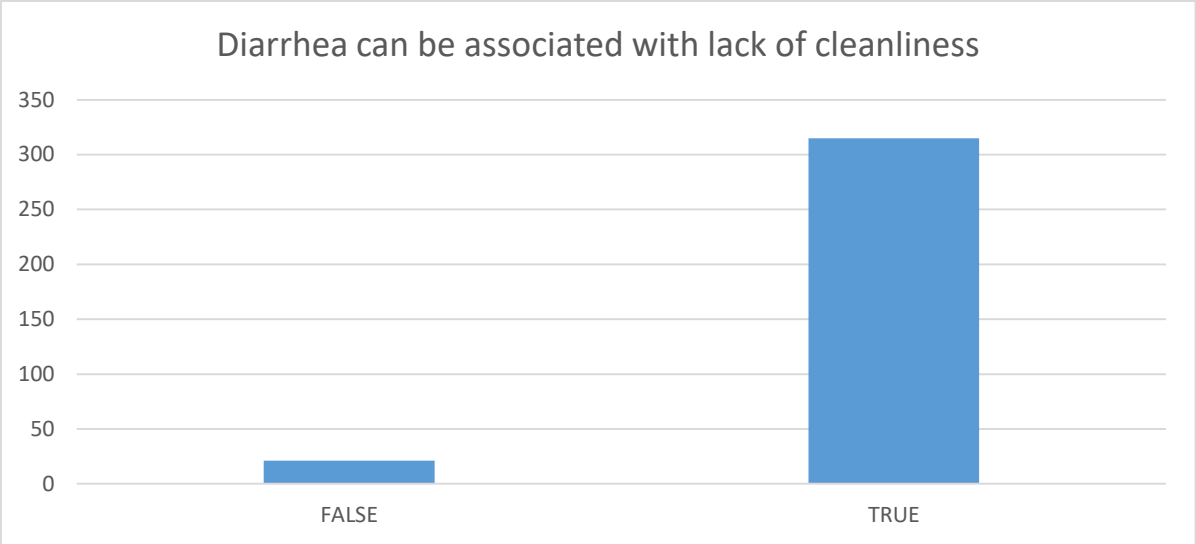
4.9 Number of People Who Recovered with Medication and Admitted in Hospital (In Last Two Weeks)

None if the infected patient was admitted in any hospital for the treatment.

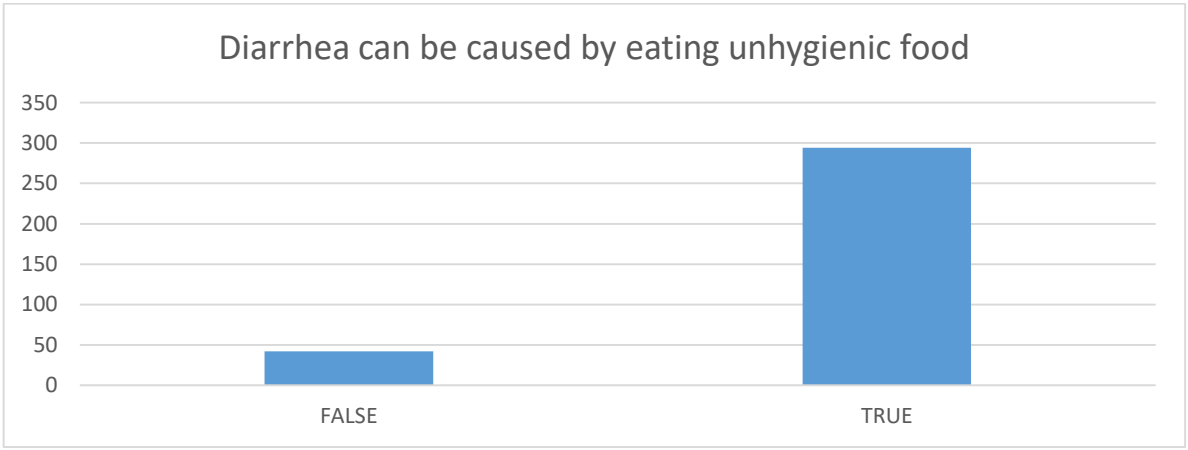
4.10 Associated Factors with Prevalence of Diarrhea

The Knowledge about Diarrhea was also assessed in the questionnaire:

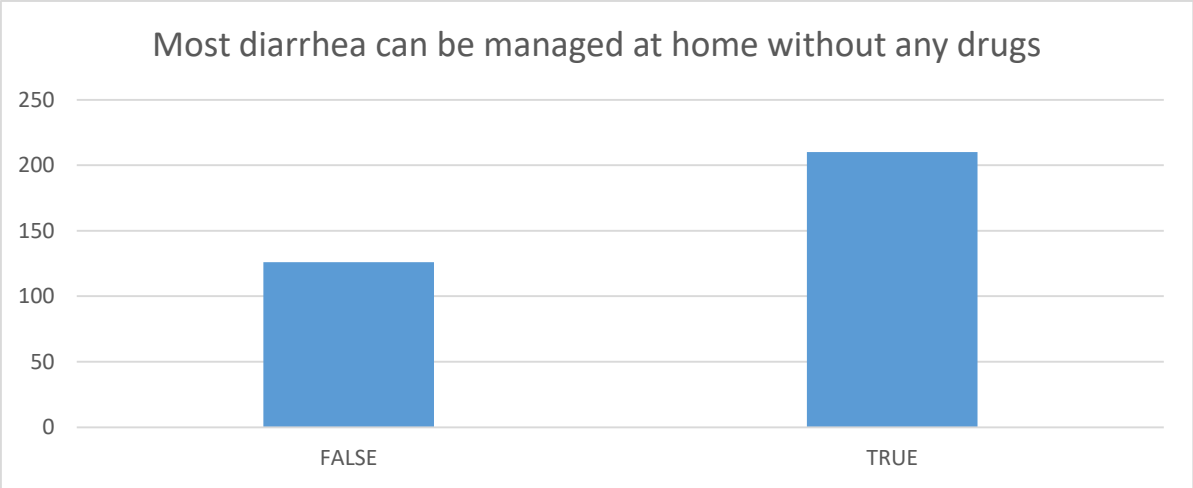
- The respondents were asked about association of diarrhea with cleanliness, 94% respondents agreed with diarrhea can occur with lack of cleanliness while 6% denied, same is shown in graph below:



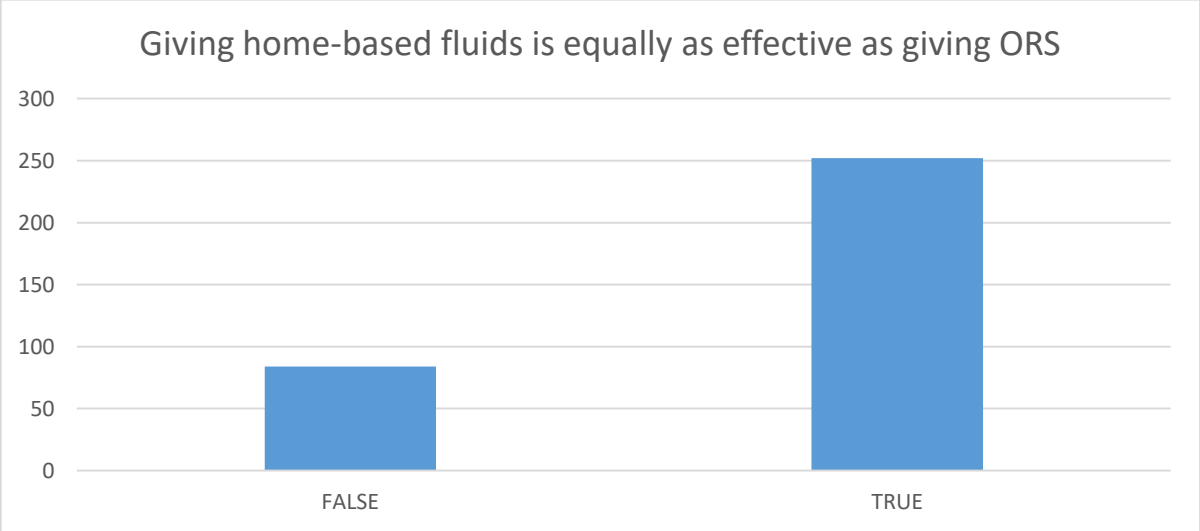
- The respondents were asked about association of diarrhea consumption of unhygienic food, 79% respondents agreed with diarrhea can occur by eating unhygienic food while 21% denied, same is shown in graph below



- The respondents were asked about management of diarrhea at home, 63% respondents agreed with diarrhea can be managed at home 37% denied, same is shown in graph below:



- The respondents were asked about effectiveness of home-based fluids in management of diarrhea, 75% respondents agreed while 25% denied, same is shown in graph below



4.11 Comparison with The Data of District Health Information System (DHIS) Of the Jacobabad

According to the data taken form DHIS Jacobabad for the year 2019. 8% pf the population has suffered from diarrhea

5. CONCLUSION

Since the studied conducted is a cross sectional study in which random simple random sampling was used.

The study findings show that there is 3% prevalence in the population covered in the study, while the data taken from the District Health Information System (DHIS) shows the prevalence is 8% in the Jacobabad city, so there is the difference in the findings.

6. DISCUSSION

Since the findings of the study are randomly collected at the community level. It differs from the data being generated from the hospitals / Basic Health Units / Dispensaries under the control of the government, but in the government facilities the people from the rural areas also come for their treatment, so the difference can be expected.

Furthermore, in this cross-sectional study with random sampling 94% respondents use covered latrine (i.e. Pit or Flush system), so the results can be expected better than general population in the country in this sample size.

7. RECOMMENDATIONS

As the study was conducted with random sampling of the city of Jacobabad. To know the actual prevalence, the same should be conducted in wider sample size comprising of rural areas as well, where the living standards are poor than the people living in the city of Jacobabad

8. LIMITATION

The study was conducted with random sample of the city (urban area) of Jacobabad with certain prevailing geographical and socio-cultural conditions. So, the findings may not be generalized in other areas.

A comprehensive study should be designed to cover the whole area, including rural area, the data of hospitals (public and private) and clinics to have a complete picture.

9. REFERENCES

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10. ANNEXURE [Data collection Tool]

INFORMED CONSENT

Good day, I am _____. I am representing a private institution_____, which is a research organization in Pakistan. I am part of a team interviewing people about health. The information will be used to improve health and services for people like you.

You have been selected to participate in this study randomly. The information gathered here will remain confidential. I will not take your name, and you the right not to answer any questions that you do not want to. Your participation in the study is voluntary and you will not be affected in any way if you decide not to participate.

I would like to ask you some questions about diarrhea. The answers will help us to learn more about opinions and experiences concerning diarrhea in children, and will be used to improve health and services for people like you. Would you be interested in participating?

If no, thank the respondent and move to next household.

If yes:

Then go with the Questionnaire

QUESTIONNAIRE

Name of respondent (optional) _____caste (optional) _____
UC: _____ Mohalla _____
Type of residence (Katcha / Pacca): _____

Socioeconomic status:
Rich: _____
Poor: _____
Middle: _____

Total family members:	**Male**	**____**	**Female**	**____**
Under five years:	Male	____	Female	____
Under 50 years:	Male	____	Female	____
Above 50 years:	Male	____	Female	____

Educational status of the family members

Total Primary	____
Total Middle	____
Total Matriculation	____
Total Graduate	____

Educational Status of the head of family (father): Primary / Middle / Matriculation / Graduate
Educational Status mother: Primary / Middle / Matriculation / Graduate

Type of water being consumed
Tape water _____Open source _____
Type of latrine being used
Open Defecation_____Covered Latrine (including pit or flush system) _____

Information about Diarrhea

Number of persons who had diarrhea (in last two weeks) -------

a. Under five years: -------
b. Under 50 years: --------
c. Above 50 years: --------

Number of people who recovered well without medication (in last two weeks) -------

a. Under five years: -------
b. Under 50 years: ---------
c. Above 50 years: ---------

Number of people who recovered with medication (in last two weeks) -------

a. Under five years: -------
b. Under 50 years: ---------
c. Above 50 years: ---------

Number of people who recovered with medication and admitted in hospital (in last two weeks) ----

a. Under five years: -------
b. Under 50 years: ---------
c. Above 50 years: ---------

Interviewer: Probe not only the people that are biologically related but also other people typically living in this household for whom the head of family is the primary caretaker.

Knowledge about Diarrhea

		True	False
Q1	Diarrhea can be associated with lack of cleanliness		
Q2	Diarrhea can be caused by drinking unsafe water		
Q3	Diarrhea can be caused by eating unhygienic food		
Q4	Most diarrhea can be managed at home without any drugs		
Q5	Giving home-based fluids is equally as effective as giving ORS		

Please tell me if you "agree strongly," "agree somewhat," "disagree strongly," or "disagree somewhat" with the following statements.

Threat Severity

		Strongly Agree	Agree Somewhat	Disagree Somewhat	Strongly Disagree
Q1	Children can die from diarrhea				
Q2	It does not seem like anyone around here has a problem because of diarrhea				
Q3	Diarrhea is a major health problem in my community				
Q4	Diarrhea is a problem in the poorer segment of the community only				