STATUS OF WATER USE, SANITATION AND HYGIENE CONDITIONS: A STUDY ON GOYLA DAIRY SLUM OF DELHI.

A dissertation submitted in partial fulfillment of the requirement for the award of

Post-Graduate Diploma in Health and Hospital Management

By
Bhawna Khatter
Roll Number: PG/10/008

International Institute of Health Management Research
New Delhi -110075

1st February 2012 to 30th April 2012

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TO WHOMSOVER IT MAY CONCERN

This is to certify that **Ms. Bhawna Khatter** has worked with us as a research trainee from February 1, 2012 to April 30, 2012. During this period she has worked on the project **"Status of Water Use, Sanitation and Hygiene Conditions : A Study on Goyla Dairy Slum of Delhi"** as a part of her dissertation and closely worked with our research, field and data processing unit and learnt many aspects of social and market research.

During this period, we found her to be sincere, good and energetic at learning research and related aspects.

We wish her all the best in her future endeavours.

Dr. U.V. Somayajulu
CEO and Executive Director

SIGMA RESEARCH AND CONSULTING PVT. LTD.
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New Delhi - 49

CERTIFICATE FROM DISSERTATION ADVISORY COMMITTEE

This is to certify that **Ms. Bhawna Khatter**, a graduate student of the **Post- Graduate Diploma in Health and Hospital Management** has worked under our guidance and supervision. She is submitting this dissertation titled **"Status of Water Use, Sanitation and Hygiene Conditions: A Study on Goyla Dairy Slum of Delhi"** in partial fulfillment of the requirements for the award of the **Post- Graduate Diploma in Health and Hospital Management**.

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Faculty Mentor: MINAKSHI GAUTAM

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Date : 7th MAY 2012

Organizational Advisor: *Dr U V Somayajulu*

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Certificate of Approval

The following dissertation titled "**Status of water, sanitation and hygiene condition: A study of Goyla Dairy slum of Delhi**" is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **Post- Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation	
Name	Signature
DR. NITISH DOGRA	Dr Dogra
PRAGYA T. GUPTA.	Pragyatigupta

Abstract

Introduction:

Almost fifty per cent of the developing world's population – 2.5 billion people – lack improved sanitation facilities, and over 884 million people still use unsafe drinking water sources. Poor water, sanitation and hygiene condition kills and sickens thousands of people every day and lead to impoverishment and diminished opportunities for thousand more. Poor sanitation, water and hygiene have many impacts. Lack of sanitation facilities makes women and girls more vulnerable to rape and other forms of gender based violence. According to census 2011, In India 46.9% of the households has latrine facility while 49.8% defecate in the open. The remaining 3.2% use public toilets. Jharkhand tops the list with 77 per cent of households having no toilet facilities, followed by 76.6 per cent in Odisha and 75.8 per cent in Bihar. More than half the population (53.2%) has access to phones but less than half the number of households has access to basic toilet facilities Without WASH (water, sanitation and hygiene), sustainable development is impossible. To gain the full benefits of safe water and sanitation communities also need to know about the links between diseases and unsafe hygiene practices.

Broad Objective:

To study the water, sanitation and hygiene practices (WASH) among urban slum dwellers.

Specific objectives of the study:

1. To explore the socio-economic and demographic characteristics of the families residing in urban slums
2. To explore the existing practices related to water, sanitation and hygiene (WASH)
3. To find out the factors affecting WASH practices

Methods:

Pre tested closed ended questionnaire was administered among 120 women living in urban slum of Delhi who were selected through random sampling.. The data analysis was done by using SPSS version16.0.

Result and Conclusions:

The condition of the slum was worse therefore emphasis should be on the knowledge and promotion of water, sanitation and hygiene. Around 50% of the population gets water from outside. Nearly 70% of the households have no access to toilets and they defecate in the open and not more than 8% households use community toilets. Reason for defecation in open was due to lack of space, cost of material and their homes can be broken down by the government; most people defecate in the open. There is a need for the improvement of conditions in urban slums not only for them but also for the country

Acknowledgement

I wish to express my deep sense of gratitude to my project Guide Dr U V Somayajulu, CEO and Executive Director and Founder of Sigma Research and Consulting Pvt, Ltd. Delhi for his guidance and useful suggestions, which helped me in completing the project work on time. His willingness to motivate me by inspiring, appreciating the efforts contributed tremendously to my project.

I would also like to thanks Miss Vinita Verma, Senior Research Associate Sigma Research and Consulting Pvt, Ltd. Delhi for all her valuable guidance in the project work.

I am especially thankful to Dr. Purujit Praharaj, Senior Research Manager at Sigma Research and Consulting Pvt, Ltd. Delhi, for guiding me at every step and sharing his knowledge with me. I am extremely grateful to my mentor Mrs.Minakshi Gautam (Assistant Professor) at IIHMR, New Delhi for taking time to share her vast knowledge with me.

Words are inadequate in offering thanks to the Project Mentors for their encouragement and cooperation in carrying out the project work. I would also like to thank my college IIHMR Delhi for giving me this opportunity to pursue Dissertation at Sigma Research and Consulting Pvt, Ltd. Delhi

Bhawna Khatter
PG/10/008

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ABBREVIATIONS

AIDS: Acquired Immuno Deficiency Syndrome

BOP: Bottom of Pyramid

BSS: Behavioral Surveillance Survey

DPU: Data Processing Unit

DLHS: District Level Health Survey

DMPA: Depot Medroxy Progesterone Acetate

FGD: Focus Group Discussion

FHI: Family Health International

HIV: Human Immunodeficiency Virus

FTU: Field & Tabulation Unit

IBBA: Integrated Behavioral and Biological Assessment

IDI: In Depth Interview

NET-EN: Norethisterone enanthate

NFHS: National Family Health Survey

NGO: Non Government Organisation

WASH: Water, Sanitation and Hygiene

SEC: Socio Economic Class

SRC: Social Research Centre

STIs: Sexual Transmitted Infections

PART 1

INTERNSHIP REPORT

Organization Profile:

Sigma Research and Consulting is a recently formed research and consulting organization offering fully fledged research services in the social and development sector, and all India data collection / field and tabulation services across all sectors.

The $\sum$ (or summation) in the logo of Sigma indicates the totality of the research arena that Sigma intends and is equipped to cover. The σ (or standard deviation, a powerful and very commonly used statistical measure) indicates the commitment of Sigma to minimize variation and maximize consistency in the data elicited and presented which forms the basis for several crucial decisions at the end of the research study.

Sigma provides research and consulting services through its Social Research Centre (SRC), Data Processing Unit (DPU) and Field & Tabulation Unit (FTU).

Sigma has three different units:
Field and Tabulation unit: FTU includes all India survey, FGDs, Rural studies, studies on sensitive issues, Training on field operations, quality assurance and Field audit / monitoring of field work.
Data Processing Unit: DPU includes Data entry, Data validation, Tabulation, Analysis, Multi variate analysis, Data entry and software development.
Social Research centre: SRC includes Social research on health and non health issues, Policy research
Consulting, Training / capacity building / conducting workshop, Report preparation, Preparation of presentation.

Sigma has experience in carrying out prestigious studies of national importance, such as:
National Family Health Survey (NFHS)
District Level Health Survey (DLHS)
HIV Behavioral Surveillance Survey (BSS)
Integrated Behavioral and Biological Assessment (IBBA)

The issues covered in such studies are:

Child labour

Health

Population

Nutrition

Reproductive and child health

HIV/AIDS

Child/new born health

Water and sanitation

Gender

Urban health

Poverty

Sexual health/STIs

Internship work

Involved under a project on Continuing Use of Depot Medroxyprogesterone Acetate (DMPA) in India– A Study of User Experience and Support Systems in Private Sector Facilities

About DMPA

The contraceptive injection called Depot Medroxy Progesterone Acetate (DMPA) is similar to the hormone called progesterone, which is produced in the female body by the ovaries. Each injection of DMPA gives protection from pregnancy up to 12 weeks. This contraceptive injection mainly works by stopping ovaries from releasing an egg (ovulation).If no egg is released then there is no chance of getting pregnant. It is very effective contraceptive. It is more than 99% effective which means less than one woman in every 100 will fall pregnant in a year if they are using the contraceptive injection correctively.

Globally, injectables are the fourth most popular contraceptive method (after female sterilization, intrauterine devices and oral contraceptives). Depot Medroxy Progesterone Acetate (DMPA) and Norethisterone enanthate (NET-EN) are two widely available injectable formulations globally; the most popular among these is DMPA. Asian countries like Bangladesh, Nepal, Sri Lanka and Pakistan have made DMPA widely available by offering it in the public health system. However, availability of DMPA in India is limited, largely due to its non-availability in the government public health system. Currently, 55% of urban woman and 45.9% of rural women in India know about the existence of injectables, as per NFHS -3. However use of injectables in India is much lower. Injectables use in India is currently 0.1% (combined figure for DMPA and NET-EN). As specified in the RFP there has been a long felt need for understanding the perceptions and experiences of the users and providers of injectible contraceptives in India. Paucity of information in an organized manner to understand the dynamics of injectable contraceptive use in India has been acknowledged and therefore, this study is being proposed to address gaps in knowledge by scientifically documenting DMPA user's experience in terms of side effects, perceptions of provider care and product, and the impact of DMPA on daily life and work and also asses provider perspectives on DMPA (knowledge on DMPA, counseling, and perceived ease of provision), as well as the appropriateness of systems in existing facilities to support

DMPA provision in India's private sector. While the public sector does not currently provide DMPA, the information learned during this study will highlight service related issues that would need to be addressed in considering public sector distribution of DMPA and in furthering women's right to reproductive health.

Work Assigned: Initially an overview was given on Depot Medroxyprogesterone Acetate (DMPA) followed by 8 days training (from February 8 2012 to February 16 2012) on qualitative research given by FHI 360(Family Health International).It was a Study of User Experience and Support Systems in Private Sector Facilities .Its objectives were about research ethics, SOPs of In-depth interviews (IDIS), transcription and translation. Practice session was also conducted in training. During the training there was a visit to Agra to know the scenario of the DMPA which was done in the UHI clinics as UHI is covering maximum clinics which are offering DMPA services. After the training, pretest of this study was conducted in Meerut on 19th march 2012 where IDIs with the users, Provider's Interview (structured questionnaire), facility checklist (structured questionnaire) was taken in the ABT clinics. After the pretest, transcription and translation was done and tool problems was discussed which was then send to the FHI.

Involved under DANONE –Study on Food Beliefs

Context

Consumption of food is a vital part of the chemical process of life but sometimes food is more than just vital. People of different cultures share different assemblages of food variables. Different cultures have different food choices. Why these choices? What determines them? Within the same culture, the food habits are not necessarily homogeneous. Different religious sects have different eating codes. Men and women, in various stages of their lives, eat differently. Different individuals have different tastes. Some of these differences may be out of preference or may be prescribed.

Need and Scope of Study

The proposed study helps in understanding the needs of BOP market, getting ideas about the business model that could be used which would make a difference in the lives of BOP. The objective of the study is to investigate food behavior by characterizing food styles and food

environments in which Danone operates and to identify factors of change so that Danone may equip itself for strategic positioning.

Broad Information Areas

The study addressed a series of issues relating to key themes about food in India.

The themes had been grouped under five major themes:

- Aspirations and preoccupation regarding food
- Practices and representations associated with food : classifications, combinations, associated values
- Delegation of trust
- Relationship between food and health
- Public concerns regarding sustainable development

Methodology

The method was largely qualitative using Observation, In-Depth Interviews (IDIs) and Focus Group Discussion (FGD).

Study Area

The study was carried out in SEC C, D and E areas in 4 northern states of India viz. Delhi NCR, Haryana, Uttar Pradesh and Punjab. The target groups for the study comprised of:

- Mothers
- Children
- Mothers-in-law
- Key informants: retailers, hawkers, school teachers, school cooks, doctors, NGO/ SHG

Target Group

- Children aged 6-10 years. Other target groups within the household include mothers and mothers-in-law/ grandmothers.

-Key informants like retailers (2 kind of retailers: mobile and non-mobile ones), doctors, school cook (or person responsible for preparing mid day meals), school teacher, Non Governmental Organization (NGO)/ Self Help Group (SHG) functionaries, if any.

The study was carried out in two phases viz. first (IDIs and observations) and second phase (FGDs). There were 10 research instruments used for the IDI component of the study while for the FGD component 2 research instruments were developed.

Work Assigned

Work was to analyze the content of all the FGDs and IDIs. The analysis heads were decided based on the indicators and in consultation with client. The responses for each indicator were extracted from the IDIs and FGDs and trend analyzed. Content Analysis was done on Excel spread sheet. Findings and verbatim from the spread sheet were used for presentation

PART 2

DISSERTATION REPORT

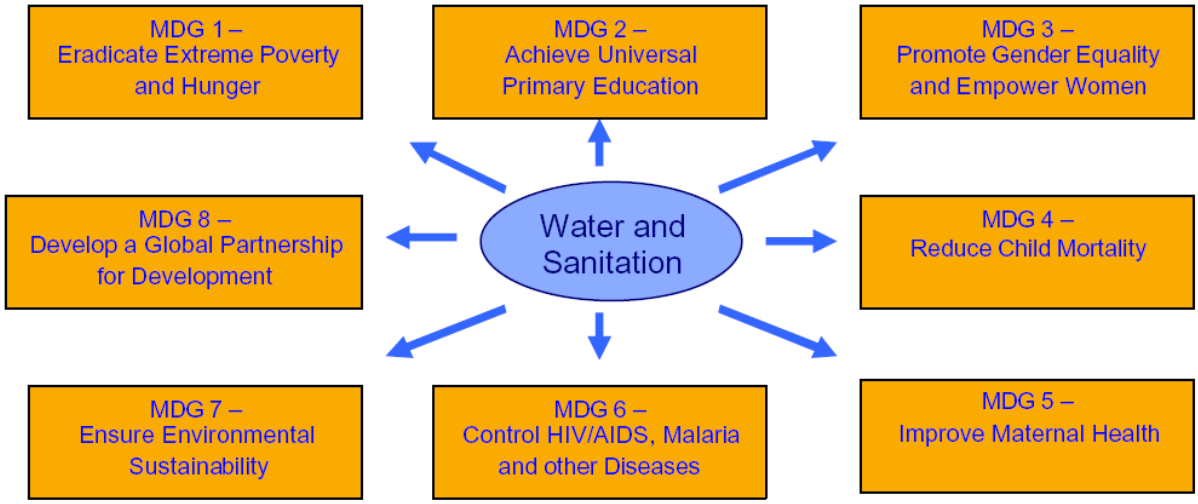
Introduction and literature review:

India is one of the fastest growing economies of the world but still has the largest proportion of the poor people in the world. About 1.15 billion population is poor (Planning Commission 2010) which is mostly small and marginal farmer, belonging to socially backward communities. Water, sanitation and hygiene are the urgent and basic need for the people to stay in good health. Almost fifty per cent of the developing world's population – 2.5 billion people – lack improved sanitation facilities, and over 884 million people still use unsafe drinking water sources. Poor water, sanitation and hygiene condition kills and sickens thousands of people every day and lead to impoverishment and diminished opportunities for thousand more. Poor sanitation, water and hygiene have many impacts. Lack of sanitation facilities makes women and girls more vulnerable to rape and other forms of gender based violence. Although in India, water and sanitation was included as community development issue in the first five year plan in the nineteen fifties, progress was slow due other more 'pressing' development priorities. Therefore between 1981 and 1991 the rural sanitation coverage grew from 1 percent to 11 percent - an average of mere one percent every year. The thrust on sanitation in India was intensified in 1999 through a policy initiative sector reforms that had the core agenda of decentralizing water and sanitation management through the Panchayati Raj (PR) System or local government at the village level

According to census 2011, In India 46.9% of the households has latrine facility while 49.8% defecate in the open. The remaining 3.2% use public toilets. Jharkhand tops the list with 77 per cent of households having no toilet facilities, followed by 76.6 per cent in Odisha and 75.8 per cent in Bihar. Even developed states like Tamil Nadu, Andhra, Gujarat and Karnataka have 40-50 % open defecation. Maharashtra appears to be the only state with some limited success at public toilets - 13% of rural Maharashtrians and 21% of urban use public toilets.

More than half the population (53.2%) has access to phones but less than half the number of households has access to basic toilet facilities. "Cultural and traditional reasons and a lack of education are the prime reasons for this unhygienic practice" Registrar General and Census Commissioner C Chandramouli said.

Taps (43%) and hand pumps (34%) are the two main sources of drinking water, followed by wells and bore wells. While taps are the most common source for urban India (71%), hand pumps are most common for rural India (44%). In ten years, however, there has not been an increase of even 2 percentage points in the proportion of urban residents with access to a tap. Over 20% of Indians get their water from unsafe sources including untreated sources for tap-users and uncovered wells. Below is an outline of how Water, sanitation and hygiene relate to each of the eight goals:



1. Eradicate extreme poverty and hunger

Time-consuming water collection greatly contributes to poverty. 5.5 billion Productive days are lost due to diarrhea and fetching water so WASH is critical for reducing poverty.

2. Achieve universal primary education

Not achieving universal primary education is linked to lack of sanitation facilities in schools and time consuming water carrying burden by the girls prevent them for not attending

3. Promote gender equality and empower women

Improving water supply and sanitation impacts positively on women's living conditions by giving them more time for productive endeavors, adult education, empowerment activities and leisure.

4. **Reduce child mortality by two thirds for children under five**

Children are most vulnerable to the diseases that result from a lack of water, dirty water and poor sanitation. Diarrhea is the biggest single killer of children in the developing world where 4,000 children die every day from water-related illnesses.

5. **Maternal health**

At the time of pregnancy women in the developing countries have to collect water and a lack of sanitation facilities means that basic hygiene practices cannot be carried out. Burden at this time leads to maternal death.

6. **Combat HIV/AIDS, malaria and other diseases**

WASH practices are important in home based care of AIDS patient in reducing opportunistic infections.

7. **Ensure environmental sustainability**

Open defecation, throwing waste openly is associated with unsustainable exploitation of natural resources. Improving sanitation and hygiene practices is a key factor for maintaining ecosystem integrity.

8. **Develop a global partnership for development**

Work with partnership organizations, governments and national and international agencies towards achieving the MDGs is part of a mutually reinforcing framework to improve overall human development. The MDGs provide a vision of development with health and education at its core. Development is not just about economic growth. Indeed, economic development is totally dependent on healthy people having time to work.

Without WASH (water, sanitation and hygiene), sustainable development is impossible. To gain the full benefits of safe water and sanitation communities also need to know about the links between diseases and unsafe hygiene practices.

Shrinking job opportunities in rural areas is one of the factor for the rapid urbanization which has led to urbanization of poverty. Due to this slums are proliferated all over the India and this impact is seen in the metropolitan cities. Delhi has over 14 million people, of which more than 4 million live in slum colonies or slum like conditions. It is one of the most rapidly growing cities

which attract 250,000 migrants every year but growing housing sector has not managed with the growth in population. As a result people started living in unauthorized and unorganized squatter settlements called slums. These slums are not larger than 48 square feet housing between six to eight people. In slums access to safe water and basic sanitation is limited and only one water pump supplies the whole slum. Health situation of the slum dwellers is poor despite of having easy access to health services. The mortality rate for children under five is 149 per 1000 live births compared to 40 per 1000 live births in all of Delhi state.

With such appalling conditions in which slum dwellers live, the city administration does little to improve sanitary and civic conditions. Providing services would be tantamount to legitimizing the unauthorized occupation of government land.

Rationale of the study:

The paper aim is to know the current situation of the Goyla dairy slum of Delhi with the purpose of proposing certain policy recommendations that would improve housing conditions of people living in slum areas. It is an extremely well researched topic in different countries with different solutions. A case by case study of each slum must be undertaken to come up with a solution for the betterment of slum dwellers. The different policies for slum development in the city are implemented by the various organizations involved and although the policies identify the interests of the slum dwellers and aim at providing them with as much comfort as possible, the realities of the implementation are often different from what is seen on paper.

Broad Objective:

To study the water, sanitation and hygiene practices (WASH) among urban slum dwellers.

Specific objectives of the study:

4. To explore the socio-economic and demographic characteristics of the families residing in urban slums
5. To explore the existing practices related to water, sanitation and hygiene (WASH)
6. To find out the factors affecting WASH practices

Research Design/ Methodology:

Study Type: Descriptive study

Study Population

Women living in urban slums were the study population.

Sampling Methodology

- Purposive Sampling was used in the selection of urban slum in Delhi.

- Random Sampling: - This method was used in the identification of respondents in the urban slum. Household were listed first then they were selected by lottery system.

Sample Size: 120

Data Collection Tool:

Structured interview questionnaire was the tool used in the study. It comprised of four sections with questions on socio demographic characteristics, water, sanitation and hygiene practices.

Data collection was completed in a time period of 10 days. Data was collected from the Goyla dairy slum near Najafgarh, Delhi.

Data Analysis:

A Database for the entry and analysis of collected data was developed in SPSS Software after the completion of fieldwork. Data was entered under the guidance and supervision of the project mentor. Data quality checks were conducted during data entry. The data entry took around 5 days. Consolidation of findings from the analysis and development of this report then followed.

Pre Testing of the Research Instrument was done at kotla slum, Delhi.

Ethical considerations:

1. The approval letter from the organization had been taken for the conduction of the research on the topic.
2. Purpose and objective of the research was explained to the respondent.
3. Verbal consent of the respondent was taken prior to data collection.
4. Privacy and confidentiality will be maintained.

Limitations of the study:

1. In some cases what respondent told was different what was observed.
2. There are some questions in the study where interviewer cannot observe so he/she has to rely on the respondent answers.
3. Limited resources like money, time etc.

RESULT AND FINDINGS

1. General Information:

1.1 Age group: The respondents were in age between 15 to 49 years. In average, the majority (47 %) of the respondents were in the age group of 25 to 34 years, followed by 21.7% in the age group of above 55 years while one fifth (20%) of the respondents were in the age group of 15 to24 years and only 4.2% were more than 45 years of age.

1.2 Education status: Majority (76%) of the respondents were illiterate while 13% of the respondents had completed their education up to middle class, followed by 11% in the primary education.

1.3 Occupation: In occupation majority (81%) of the respondents were not working; 11% did temporary work and only 6% were self employed.

1.4 Income: Average household income in majority (47.3%) of the household was in between 4000 to 6000, 40.2% had income in between 2000 to 4000 and only 2.7% had income more than 6000.

1.5 Type of family: 89% families in the slum were nuclear followed by 11% living in joint families.

1.6 House type: Majority (71.7%) of the houses in slum come under to semi pucca category while 26.7 % come under pucca category and remaining 1.7% come under Kaccha house type.

2. Drinking Water

2.1 Source of water: Survey shows that majority of respondent's source for domestic water was tube well/borehole outside house i.e. 53.3%, 19.2% respondent have connection at their home. Same source was seen in drinking water i.e. 56.7 % get water from tube well/borehole outside house. It was also seen that 6.7% people source of drinking water was bottled water as according to them water outside the house was not clean and not good in taste.

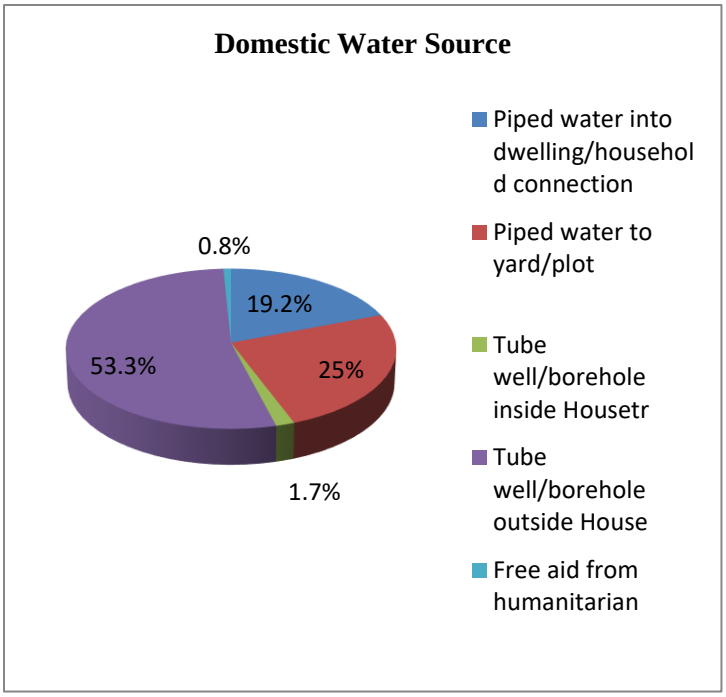


Fig 1: Domestic water source

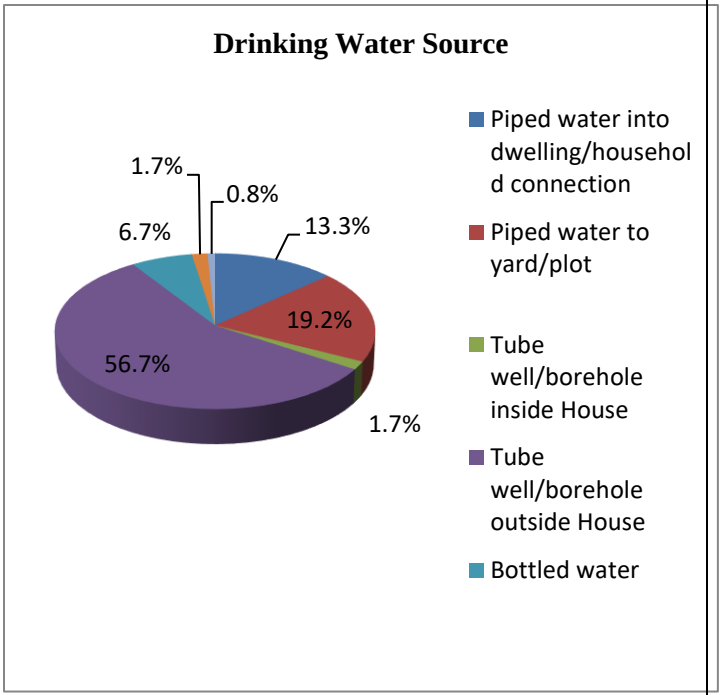


Fig 2: Drinking water source

2.2 Trips made per day and time to get water. Mostly slum dwellers are dependent on tube-well water. However, all families did not have equal access to the tube-well water. This was mainly due to difference in the distance of the tube-wells from their individual houses. Usually women of slums collect water from the tube wells. As the sources were over populated most of the time they have to wait for a long time to collect a jar of water. Majority (39.7%) of the women made 6 to 10 trips per day for collecting water while 5.1% of the women made more than 10 trips per day.3.8% of the respondents have always wait to get water. Time to wait for getting water was less than 15 minutes in 48.1% cases followed by 29.9% get water in 15 to 30 minutes.

2.3 Person who fetches the water

In the survey it was seen that only Adult woman (100%) fetches the water**.**

2.4 Cleaning of water vessel before filling

According to the data, mostly respondents, i.e. 81.7%, used to wash the water vessel before filling, the remaining respondents didn't feel this was an important action.

2.5 Covering the drinking water container

Observation of the water vessels was conducted in order to know whether there was a practice of covering the water vessel. It was found that 73.3% of the respondents covered the water vessel and the water vessel was also clean during the data collection. The remaining 26.7% of the respondents did not show this to be a practice in their household though they mentioned knowing about its importance.

2.6 Perceptions of safe drinking water:

Results show only 7.5 % respondents did water treatment before consumption and remaining 92.5 % did not do any treatment. Regarding water treatment, some feasible practices like stain through cloth, use alum, chlorine/iodine, let it stand and settle seen in the results. In the survey only 44.4 % of the respondent stain it through cloth and 33.3 % follow let it stand and settle method.

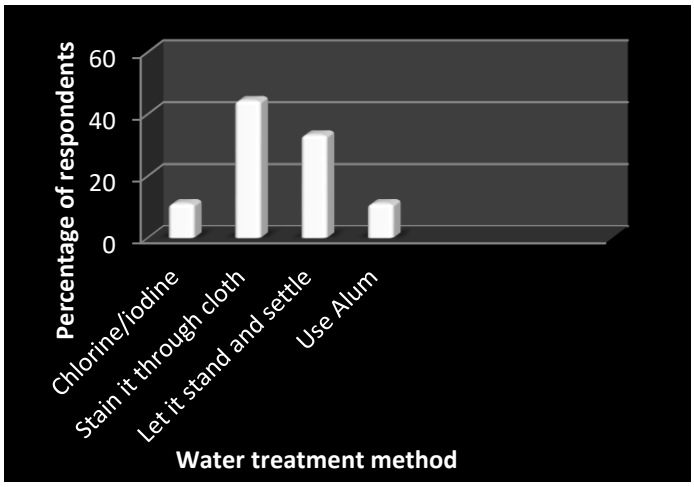


Fig3: Treatment of drinking water

2.7 Process for fetching water from container

In order to take out drinking water from the storage vessel, immersing glass or tumbler (utensil without ladle) inside the vessel was the most common process and was being practiced by 56.7%

of the households and those who were fetching water from vessel by using utensil ladle was about 22.5%.Inspite of using utensils with or without ladle it was observed that many flies were present on the utensils. Only 4.2% fetch water from the faucet which was very less but a good method for fetching water.

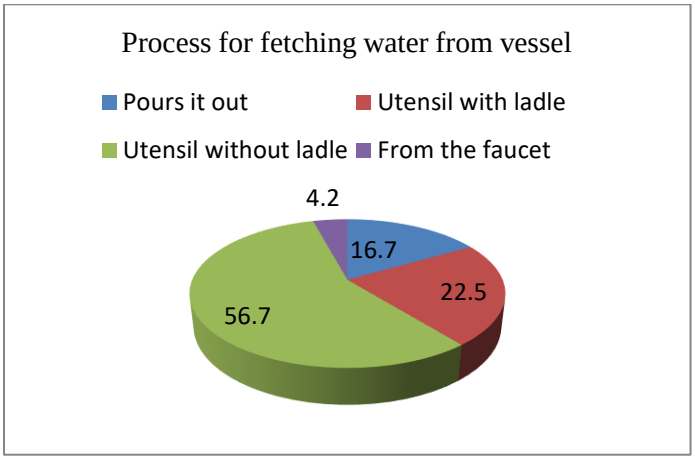


Fig 4: Figure shows process of fetching water from vessel

2.8 Water source for cooking

For cooking food 53.3% of the respondents use drinking water, 0.8% use domestic water and 45.8% use both domestic and drinking water

3. Sanitation and hygiene practices related information

3.1 Toilet at the household level

The survey data shows that 31.7% of the respondents have latrine in their household whereas 68.3% of the respondents have no latrine in their household.69.2% people who are educated up to primary class and 56.2% people who are educated up to middle class have toilets in their home but only 20% of the illiterate people have toilets in their home. This shows that education has an impact on having importance of toilets in home

3.2 Households having no latrines

Around 92.7% percent households have no access to any toilet and normally resort to open defecation, 1.2% percent households have access to community toilets and around 6.1% percent have access to other household toilet. Among the reasons provided by respondents for not having toilet was mainly due to space problem (45.1%) and cost of material (35.8%).

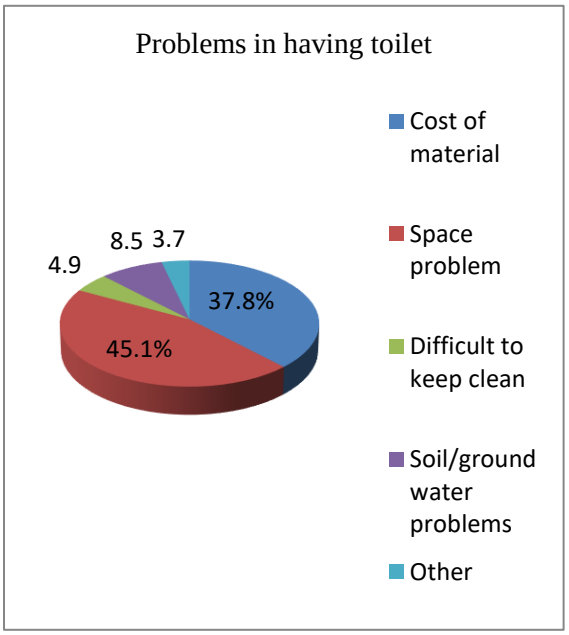


Fig 5: problems in having toilet

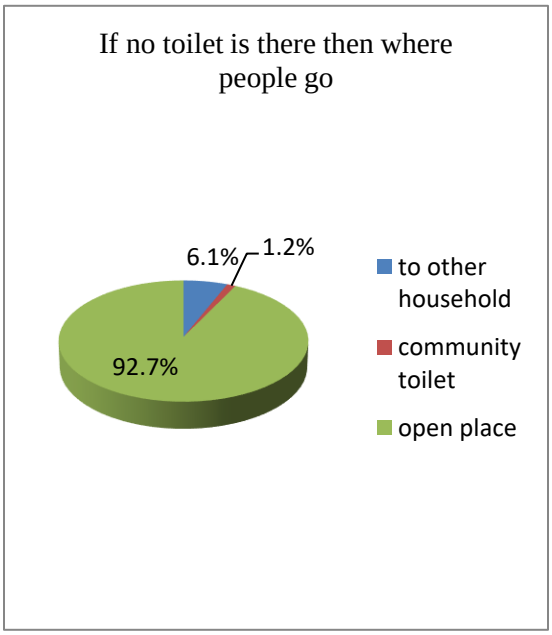


Fig 6: Where people go if there is no toilet

3.3 Wear slippers when going for defecation

37.5 % wear slippers or anything on feet when going for defecation and remaining 62.5% respondents didn't wear slippers or anything.

3.4 Hand washing Practices

From Table, we can see that, a large majority of the respondents (40%) reported of using mud in washing hands returning from toilet. Others used clay or ash (2.5%) or simply water (26.7%). Then second highest (30.8%) responses are with soap and water of all the respondents. Majority (41.6%) mothers wash hands with soap after cleaning baby's bottom followed by 32.5% with water only.

	Only water (%)	Water and soap (%)	Water and ash (%)	Water and mud (%)	Total N
After using toilet	26.7	30.8	2.5	40.0	120
Before feeding to children	91.6	6.0	-	2.4	83
After cleaning baby's bottom	32.5	23.4	2.6	41.6	77

Table1. presents hand washing practice of respondents

3.5 Place for hand washing

Only 4.2% respondents had separate place for hand wash in their household while majority of the respondents i.e. 95.8% had no place for hand wash.

3.6 Frequency of bathing

From the survey it resulted that 62.5% of the respondents took bath everyday while 34.2% took bath four times or more per week and 3.3% take bath at least once a week but in illiterate people around 40% respondents took bathe four times or more per week which showed that educated people have knowledge that one should take bath every day

		Everyday	Four times or more per week	At least once a week	
Education	Illiterate	50	37	4	91
	Primary (1-5)	9	4	0	13

Middle (6-8)	16	0	0	16
Total	75	41	4	120

Table 2.0 represents relation of education and bathing activity of the respondents

3.7 Stagnant water near house

65% respondents told that they had proper drainage system so there was no stagnant water near their house and remaining 35% respondent told stagnant water near house.

3.8 Place of cooking food in the house

Majority of the people cooked food in open yard i.e. 35.8%, 4.2% respondents had kitchen at their home and remaining 60% cooked food within the living room. Reason for cooking in open yard or within living room was no space.

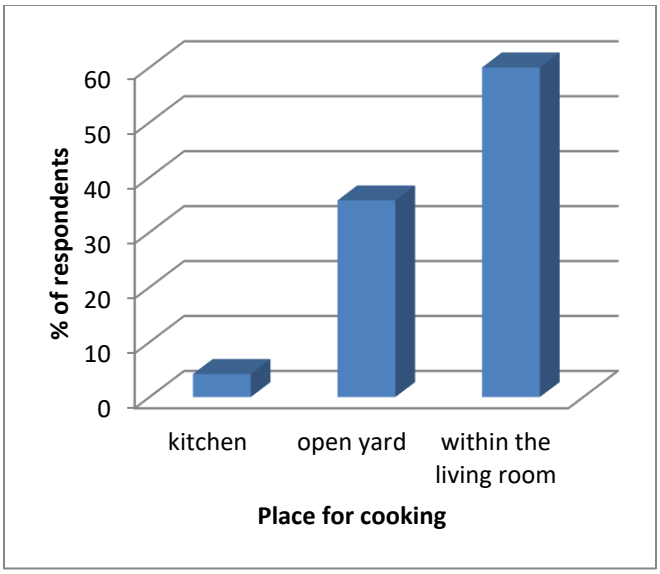


Fig 7: Place for cooking

3.9Waste management

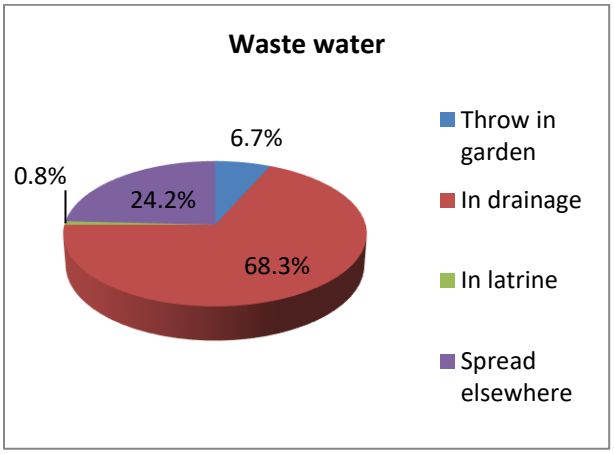
Management of Waste Water

Data shows that waste water from cooking, washing vegetables, pots etc. was put into the drainage

i.e. 68.3% are managing drainage system.24.2 % of the respondents spread it elsewhere. Only 0.8% of households are managing waste water in gardens.

Managing household waste

Survey shows only 33.3% of the respondents are properly managing household waste by putting it into garbage pit or giving it to the MCD, while the vast majority (66.7%) is discarding it anywhere.



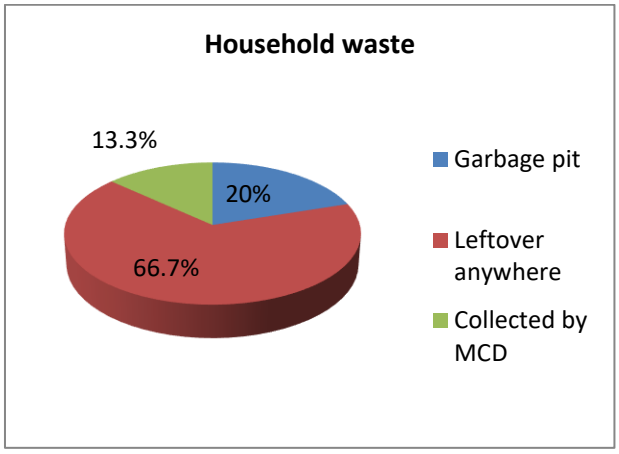


Fig 8: Waste water management

Fig 9: Household waste management

DISCUSSION:

Provision of safe drinking water has been of primary concern in rural India. Poor water and sanitation practices kill and sicken thousands of lives. Globally, 63 per cent of the population use improved sanitation facilities; target is to reach 75% by 2015. 89 per cent of the world's population, or 6.1 billion people, used improved drinking water sources

In India, water and sanitation was included as community development issue in the first five year plan in the nineteen fifties. According to census 2011 India, 46.9% of the households has latrine facility while 49.8% defecate in the open. More than half the population (53.2%) has access to phones but less than half the number of households has access to basic toilet facilities. Taps (43%) and hand pumps (34%) are the two main sources of drinking water, followed by wells and bore wells. While taps are the most common source for urban India (71%), hand pumps are most common for rural India (44%).

The percentage of the world's population using improved drinking-water sources increased from 77% to 87% between 1990 and 2008, a rate on track with meeting the global MDG drinking-water target Studies done in and around Vellore town, both in epidemic and endemic settings have found drinking water to be microbiologically contaminated and unfit for human consumption. The findings of this study revealed that self-reported usage of latrine was about 6.1% which is nearest to the report in India (46%). However, the use of latrines by children was not encouraging. Few children began to use the latrine at the age of 3 years in this study. In India although children began to use the latrine as early as 2 years, most of them start at the age of 5 which is consistent with the present study. The methods of handling of faeces of under-five children varied among respondents: 2.3% disposing faeces in the latrine, 65.9 % burying while 31.8% disposing around the house either in the bush or in the garden. This behavior is entirely unacceptable practice of handling faeces. The use of latrine for safe disposal of children faeces in the present study was worst when compared with the reports in India (53%) and Philippines (39%). Knowledge on the danger of excreta and the perceived advantage of using latrines, particularly for girls and women in a community where defecation during the day time is shame, were key factors that facilitated latrine use by the household members. Major reasons that deter latrine use by the households were non-functional latrines, staying out for farming, and the absences of superstructure. These are about similar to the survey conducted in 1997. Mother's

education (Kenya), latrine design, accessibility, and maintenance (Nepal), user being women (India) were important determinants

.Hand washing after defecation is very important for sanitation practice. In the study area, it was also observed that parents were asking their children to wash hand after using latrine. Research conducted by International Center for Diarrheal Diseases, Bangladesh has indicated that as a rubbing agent, soil was commonly used by 40% of the user, soap by 29% of the users while it was reported un affordable by 81% of the non users (31%). A classic study in Bangladesh showed that the simple practice of washing hands with soap after defecation was sufficient to reduce the secondary attack rates if dysentery within the participating families by 85 per cent (Khan, 1982). Another relevant study showed that hand washing with soap and water after contact with faecal material can reduce diarrheal diseases by 35% to more. Using a clean pit latrine and disposing children's faeces in a pit can reduce diarrhea incidence by 36% or more (Almedom *et al.*, 1997). Hand washing was positively associated with better social and economic indicators including education of the women. A few epidemiological studies showed that diarrheal morbidity reduces significantly by proper interventions of sanitation improvement (DFID, 1998).

CONCLUSION:

- This study was undertaken primarily to draw attention to the situation of water and sanitation.
- The condition of the slum was worse therefore emphasis should be on the knowledge and promotion of water, sanitation and hygiene
- Water availability was there in the slum but people have to get water from outside. Due to which they have to stand in queue to get water and made many trips for the collection of water. Around 50% of the population gets water from outside.
- Status of access to sanitation facilities: sanitary conditions seem to be worse than water. Nearly 70% of the households have no access to toilets and they defecate in the open and not more than 8% households use community toilets. This is indicative of the limited use of the community toilets in improving the sanitation environment in the area. Its limited use is also explained by the lower availability and accessibility, apart from poor maintenance in terms of irregular or no water supply, bad sanitary condition and lack of proper drainage. For lack of space, cost of material and their homes can be broken down by the government; most people defecate in the open.
- Like any other slums of the city, the availability of dustbins, their regular cleaning and user's waste disposal behavior are not very different here. Lack of a defined garbage dump point or designated areas for solid waste disposal and inefficient municipal services could be responsible for more than 66.7% households dumping waste in the open making the area vulnerable to diseases borne by flies and mosquitoes and other such parasites. Only 13.3% households receive a doorstep facility for solid waste disposal and only 20% are taking the garbage to neighborhood points.
- Some observations from the slum:
  -It was also observed that garbage was being thrown in the drainage channels of the slum implying a serious cyclical problem of water logging. Water logging problems contributed directly to unhygienic conditions in the slum.
  -Young Girls have problem in going out for defecation and also in taking bath as there was no bathroom at home.
- Barriers for good hygiene and sanitation practices were education, income, knowledge.

- If this condition is continued then we are not able to achieve MDGs.
- There is a need for urban health in slums to improve the condition not only for them but also for the country.

RECOMMENDATIONS:

1. There is need for water, sanitation and hygiene programme to improve the situation of this slum.
2. Because of no cleanliness only 1.2% of the population is using community toilet so there is need of improvement of community toilet so that everyone can use.
3. There should be a defined garbage dump point or designated areas for solid waste disposal by the municipal services.

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ANNEXURES

Form No.

STATUS OF WATER USE, SANITATION AND HYGIENE CONDITIONS: A STUDY ON GOYLA DAIRY SLUM OF DELHI

Name	
Place	
Address with Ph. No.	

INTRODUCTION AND INFORMED CONSENT

Namaste. My name is **Bhawna** and I am from IIHMR, New Delhi. We are conducting a survey about Water, sanitation and hygiene practices. We would very much appreciate your participation in this survey. We would be discussing various aspects related to WASH practices. This interview will take approx. 10-15 minutes. We assure you that the information provided by you will be kept strictly confidential and only for research purposes. Your participation in this survey is voluntary and you are free to stop the interview any time.

However, we hope that you will take part in this survey since your participation is important and will give us new insights into the topic (may specify as well).

Before starting the interview do you want to ask me anything about the survey?

May I begin the interview now? Yes……1 No……..2

Signature of interviewer _____

Date:……

Background Information

S.No.	Questions	Coding categories
1.	Age (in completed years)	_____
2.	What is your marital status?	Unmarried .....1 Currently Married .....2 Widow.....3 Separated.....4
3.	Education	Illiterate.....1 Primary (1-5) .....2 Middle (6-8).....3 Secondary (9&10).....4 Sr Secondary (11&12).....5 Graduate .....6 Post Graduate.....7 Other (Specify).....8
4.	What is your main Occupation	Not Working..... .....1 Permanent Service.....2 Temporary Service .....3 Professional Work .....4 Self Employed.....5 Others (specify)..... 6
5.	Average household Income per month	_____
6.	Type of Family	Nuclear.....1 Joint.....2
7.	Total no. of family members living in the house	_____
8.	House type	Kuchha house.....1 Semi-pucca.....2 pucca house.....3

S.No.	Question	Coding Category	Skip to
	WATER		
9	What is the primary source of drinking water for your household?	Piped water into dwelling/household connection……1 Piped water to yard/plot……2 Tube well/borehole inside House……3 Tube well/borehole outside House……4 Surface water (river/stream)……5 Bottled water……6 Water vendor/tanker delivery……7 Free aid from humanitarian……8 Others(specify)……9	
10	What is the primary source of water for Domestic use in your household?	Piped water into dwelling/household connection……1 Piped water to yard/plot……2 Tube well/borehole inside House……3 Tube well/borehole outside House……4 Surface water (river/stream)……5 Bottled water……6 Water vendor/tanker delivery……7 Free aid from humanitarian……8 Others(specify)……9	
11.	If water connection is out side house then ask a) How far you have to go to collect your water? b) How many trips per day do you make to the water source? c) Do you have to wait to get your water? d) How long do you usually wait?	 a) ……(in Time) b) 1-2……1 3 to 5……2 6 to 10……3 More than 10……4 Other (specify)……5 Don't know……8 c) Always……1 Sometime……2 Never……3 d) Less than 15 minutes……1 15-30 minutes……2 30-60 minutes……3 Don't Know……8	

12.	Who usually fetches water for household?	Adult woman.....1 Adult man.....2 Female child.....3 Male child.....4 Others (specify).....5	
13.	What type of vessel you use to store the drinking water?	Clay .....1 Aluminum.....2 Plastic.....3 Others(specify).....4	
14.	Do you cover the container?	Yes.....1 No.....2	
15.	Do you clean your vessel before filling drinking water?	Yes.....1 No.....2	
16.	Do you treat your drinking water before consuming?	Yes.....1 No.....2	If No then go to Q.No.18
17.	a) If yes then what is the process of treating the water? b) How often do you treat the water?	a) Chlorine/iodine.....1 Boil.....2 Stain it through cloth.....3 Water filter.....4 Let it stand and settle.....5 Solar disinfection.....6 Use Alum.....7 Other.....8 b) Always.....1 Sometime.....2	
18.	What is the process for fetching the water from container?	Pours it out.....1 Utensil with ladle.....2 Utensil without ladle.....3 From the faucet.....4 Others(specify).....5	
19.	What is the water source for cooking?	Drinking water.....1 Domestic water.....2 Both.....3	
	SANITATION		
20.	Do you have toilet in your house?	Yes.....1 No.....2	If No, then go to Q.No. 22

21.	If yes then a) What sort of toilet does your house have? b) How many members share this? c) Do other household share your toilet? d) How was the septage disposed?	a) Indian style……1 European style……2 Others (Specify)……3 b)…… (No. of people/ members) c) Yes……1 No……2 d) Thrown in field/water body……1 Taken away in truck……2 Don't know……8	
22.	If no then a) Where you go? b) What are the main problems in having a household toilet?	a) to other household……1 community toilet……2 open place……3 other(specify)……4 b) Cost of material……1 Space problem……2 Difficult to keep clean……3 Soil/ground water problems……4 Other(specify)……5	
23.	Do you wear slippers or anything on your feet when going for defecation?	Yes……1 No……2	
	HYGIENE PRACTICES		

24.	When do you usually wash your hands? Read out the options		Only water	Water and soap	Water and ash	Water and mud	others	
		a)Before meal time	1	2	3	4		
		b)After meal time	1	2	3	4		
		c)Before cooking	1	2	3	4		
		d)After using toilet	1	2	3	4		
		e)Before feeding children	1	2	3	4		

		f)Before serving to other family members	1	2	3	4		
		g)After cleaning baby's bottom	1	2	3	4		
25.	Is there a separate place in your house for household members to wash hands?	Yes……1 No……2						
26.	How often do your family members bathe/shower?	Everyday……1 Four times or more per week……2 At least once a week……3 Less often……4						
27.	Do you have stagnant water near your house?	Yes……1 No……2						
28.	Where do you cook food in the house?	Kitchen……1 Open yard……2 Within the living room……3						
29.	How do you keep food after cooking?	Covered in utensils……1 Fridge……2 Serve food immediately……3 Uncovered in utensils……4 Other (specify)……5						
30.	Do you have a proper drainage system in your house for drainage of waste water?	Yes……1 No……2						
31.	What do you do with the waste water?	Throw in garden……1 In drainage……2 In latrine……3 Spread elsewhere ……4 Others (specify)……5						
32.	What do you do with the household solid waste/garbage?	Garbage pit……1 Direct fertilizer……2 Burning……3 Leftover anywhere……4 Collected by MCD……5 Others (specify)……6						

THANKYOU