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### COMMUNITY EVALUATION AND HEALTH IMPACT ASSESSMENT FIELD WORK CONDUCTED AT BAGALCHI VILLAGE IN GEREI L.G.A OF ADAMAWA STATE NIGERIA

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#### Abstract

*Community evaluation and health impact assessment is aimed at promoting a set of good public health and hygiene practices and Bagalchi community is selected to achieve this aim. The community were assessed on the effect of indiscriminate defecation, reduction in the number of household within ten meters and the effect of handling food was carried out after which the community was reassessed to see the level of change/impact of the awareness in the community. The awareness of indiscriminate defecation was increased by 70%, the number of households that have human excrement within 10m was increased to 36.4% and the number of people that handle food without washing their hands was raised by 7.5%.*

*Personal hygiene plays a vital role in preventing most infectious disease; therefore effort towards community awareness through health education will do a long way in helping to reduce the rate of infectious disease transmission among people.*

**Key Words:** Awareness, Community, Disease, Health

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## INTRODUCTION

### 1.0 Brief History

Bagalchi is situated at 9, 19<sup>1</sup>, 16<sup>11</sup> and 12<sup>1</sup>, 28, 26<sup>11</sup> E about 2km away from Modibbo Adama University of Technology Yola. The village is under Sangere ward, Girei Local Government Area of Adamawa State. The village was in existence for about 300 years, according to oral narration by the village head. The occupants are mostly Muslims and Christians and the major ethnic groups are Kanuri, Fulani, and Higgi. Others are Yungur and Margi. The entire houses are muddy. The village has no school, no electricity, no hospital, no market, but have bear parlous, one borehole, one pond, one well, two (2) churches and two (2) mosques.

### 1.1 Discussion with the Previous Set

4<sup>th</sup> April, 2014 was selected for a class with the previous class for detail explanation of the village and their report was collected photocopied and well comprehended.

### 1.2 Preliminary Visit and Negotiation for participation

Bagalchi was visited on 8<sup>th</sup> April, 2014 which was selected as study area. The village head of Bagalchi By name Malam Abubakar, popularly known as Bamanga Bagalchi, gave permission to conduct the study in his village after enlightening him on the benefits of the study to the village. The village head gathered some of the village members and their participation in the study was negotiated. Fortunately, they agreed to participate fully in the study.

### 1.3 Statement of the Problem

According to the previous report, about 70% of households in Bagalchi do not have latrine. People defaecate outside and this habit with respect to poor sanitation may result in pollution of the environment with human excreta containing infectious agents which can cause diseases such as dysentery, cholera, Typhoid fever etc. These diseases are often associated with dirty environment.

### 1.4 Broad Objective

The aim of this study is to promote a set of good public health and hygiene practices among the Bagalchi community.

#### 1.5.1 Specific Objectives

The specific objectives are :

1. To increase awareness about the effect of indiscriminate defaecation by 30%
2. To reduce by 10% the number of households that have human excrement within 10m
3. To reduce by 20% the number of people that handle food without washing their hands

## 1.6 BASELINE DATA COLLECTION

Baseline data on the level of awareness of the effect of indiscriminate defaecation, the number of people that handle food without washing their hands and the number of households that have human excrement within 10m was collected using structured questionnaire (Appendix 1,2, and 4). The results were presented in tables as shown below.

**Table 1.** Awareness of indiscriminate defaecation and food handling with respect to gender

| Sex                     | Male      | Female   | Total    |
|-------------------------|-----------|----------|----------|
| <b>No. aware (%)</b>    | 37 (37.4) | 49(49.5) | 86(86.9) |
| <b>No. not aware(%)</b> | 4(4.0)    | 9(9.1)   | 13(13.1) |

**Table 2.** Food handling with respect to gender

| Sex                                           | Male     | Female   | Total    |
|-----------------------------------------------|----------|----------|----------|
| <b>Hand washing before handling food (%)</b>  | 35(35.4) | 43(43.4) | 78(78.8) |
| <b>Food Handling without hand washing (%)</b> | 8(8.1)   | 13(13.1) | 21(21.2) |

**Table 1 and Table 2** above shows the awareness level of indiscriminate defaecation and the number of people that handle food without washing their hands in Bagalchi community with respect to sex. The total population that participate in the baseline data collection is 99 in which 37(37.4) Males and 49(49.9) Females are aware of the effect of indiscriminate defaecation while 4(4.0) Males and 9(9.1) Females are not aware. 35(35.5) Males and 43(43.4) Females wash their hands before handling food while 8(8.1) Males and 13(13.1) Females handle food without hand washing.

**Table. 3** Age specific awareness about the effect of indiscriminate defaecation and food handling

| Age                                           | 1-10     | 11-20    | 21-30    | >30      | Total    |
|-----------------------------------------------|----------|----------|----------|----------|----------|
| <b>No. aware (%)</b>                          | 6 (6.0)  | 26(26.3) | 24(24.3) | 30(30.3) | 86(86.9) |
| <b>No. not aware(%)</b>                       | 4(4.1)   | 4(4.1)   | 3(3.0)   | 2(2.0)   | 13(13.1) |
| <b>Hand washing before handling food (%)</b>  | 4(4.0)   | 9(9.1)   | 31(31.3) | 34(34.3) | 78(78.8) |
| <b>Food Handling without hand washing (%)</b> | 10(10.1) | 6(6.1)   | 4(4.0)   | 1(1.0)   | 21(21.2) |

1-10 age group have the least level of awareness with a population of 6(6.0) whereas >30 age group have the highest level of awareness with a population of 30(30.3). 10(10.1) people in the age group of 1-10 handle food without hand washing while 1(1.0) person in >30 age group handle food without hand washing.

**Table.4** Awareness about the effect of indiscriminate defecation and food handling with respect to occupation

| Occupation                                    | Civil servant | Students | Farmers  | Traders  | Total    |
|-----------------------------------------------|---------------|----------|----------|----------|----------|
| <b>No. aware (%)</b>                          | 6 (6.1)       | 15(15.2) | 55(55.6) | 10(10.1) | 86(86.9) |
| <b>No. not aware(%)</b>                       | 0(0.0)        | 2(2.0)   | 7(7.1)   | 4(4.0)   | 13(13.1) |
| <b>Hand washing before handling food (%)</b>  | 8(8.1)        | 20(20.2) | 40(40.4) | 10(10.1) | 78(78.8) |
| <b>Food Handling without hand washing (%)</b> | 0(0.0)        | 2(2.0)   | 13(13.1) | 6(6.1)   | 21(21.2) |

Farmers have the highest number of people that are not aware of the effect of indiscriminate defaecation and the least level is found among civil servants. Farmers have the highest number of people that handle food without hand washing while the least number is found among civil servants.

**Table. 5** Human excrement within 10m Around households

|                                                    |                 |
|----------------------------------------------------|-----------------|
| <b>No. of Household with human excrement (%)</b>   | <b>19(39.6)</b> |
| <b>No. of household without human excrement(%)</b> | <b>29(60.4)</b> |
| <b>Total (%)</b>                                   | <b>48(100)</b>  |

Out of the 48 households, 19(39.6) have human excrement within 10m while 29(60.4) do not.

### 1.7 INTERVENTION

Awareness campaign was carried out on Personal hygiene and environmental sanitation. The most convenient time selected was on the 18<sup>th</sup> May, 2014 which was a Sunday as suggested by the village head. He suggested Sunday after church service because most of the villagers will be at home by then as they would not be going to the farm.

At about 1:30 pm, we arrived Bagalchi community and by 2:00pm we started the campaign which lasted for one hour fifteen minutes. The villagers were grouped into three viz; men, women and children.

This grouping was necessary in order to adhere to their religious and cultural beliefs and also to ease the campaign plan. The facilitators were spread across the three groups in the village and each group based the facilitation on two topics of public health

- Personal hygiene and
- Environmental sanitation

### 1.8 PERSONAL HYGIENE

**1.9** Personal hygiene was defined as taking care of the whole body regularly in order to be healthy and be free from diseases. This includes washing the body (cleanliness of the body) and washing of clothes.

Some good grooming routines for the hair, skin, teeth, ear, eyes, nails and feet were given to

the villagers.

- The hair should be washed regularly using soap or shampoo, it should be rinsed well with water and dried after every washing and be kept clean. The men should cut their hair to a healthy and easy to maintain level. This will help prevent diseases like typhus caused by lice and dandruff.
- Skin : people should take their bath with clean water and soap at least once or twice daily, most especially after work. Drying with a clean towel is important.
- Teeth should be kept clean by using a toothbrush or chewing stick and this should be done morning and evening and after every meal. This is to prevent tooth decay and holes in/on tooth.
- Nails should be cut regularly and kept clean. Blade should not be shared for cutting nails. Cutting the nails removes the germs that may possibly be transferred into the mouth during feeding.

#### **1.8.1 Washing of clothes**

Clothes should be washed with cold or warm water to remove dirt. Expose the clothes to sunshine and press it to kill the eggs of bed bugs and body louse.

#### **1.8.2 Washing of Hands**

So many infectious diseases particularly gastro-intestinal infections can be spread from one person to another by contaminated hands. Washing of hands properly can prevent the spread of such diseases. The hands should be washed thoroughly:

- Before preparing food;
- Before eating food;
- After toilet;
- After work;
- After handling animals;
- After attending to the sick;
- After several handshakes.

### **1.9 ENVIRONMENTAL SANITATION**

Environmental sanitation includes:

- Washing utensils;
- Cleaning the house;
- Clearing of vegetation around houses;

- Proper disposal of domestic waste: Domestic wastes can be classified into kitchen waste and excretory waste.

**Kitchen waste includes :**

- kitchen refuse
- Vegetable matter
- Pieces of paper
- Floor dust

Methods of dealing with kitchen refuse :

The methods of dealing with kitchen refuse includes :

- Dustbins : Each household should have a dustbin at strategic location to collect domestic waste before dumping it in a pit or incinerator for burning
- Pits/Composting
- Incineration

**Excretory waste** includes urine and faeces which can be disposed through :

- Pit latrine and
- Bucket latrine

**Faeces Management**

Careless defecation around houses can aid the spread of so many infectious diseases of public health importance. Proper handling of faeces will prevent a lot of such diseases outbreak. Examples of common diseases that can be transmitted through careless defecation include; cholera, typhoid, bilharzia, diarrhoea, dysentery, etc. Just of recent, there was an outbreak of cholera in the community which caused the death of 4 adult members of Bagalchi community. Those who could not afford a latrine at a time should negotiate with a neighbour for one. Every household was encouraged to own at least a pit latrine for the household use. One must discipline every member to use the latrine no matter what. Children excreta should also be deposited in the latrine.

## 1.10 DISEASES ASSOCIATED WITH DIRTY ENVIRONMENT

### 1. Dysentery

Causative organism : *Entamoeba histolytica*

Symptoms :

- Production of frequent and watery stool
- Faeces mixed with blood and mucus

- Lower abdominal pain
- Prevention and control :
- Proper self and home hygiene
- Boil water before drinking
- Proper disposal of faeces to exclude flies and to avoid water contamination
- Those who prepare food must be neat and clean
- Washing of hands before meals.

## 2. Cholera

Causative organism : *Vibrio cholerae*

Symptoms :

- Very frequent and watery stool
- Patients vomit very frequently

Prevention and control:

- Use clean, sterilized water
- Do not eat contaminated food
- Isolate the patients for about two weeks
- Disinfect rooms
- Good sanitation restricts the spread of the disease

## 3. Typhoid fever

Causative organism : *Salmonella typhi*

Source of infection : Contaminated water and food

Symptoms :

- Abdominal pain
- Fever
- Loss of appetite

Prevention and control :

- Isolate patients and disinfect rooms, faeces and urine
- Water and food should be clean and free from houseflies
- Washing of hands before meals
- Proper disposal of faeces and urine.

## Domestic Water Supply

Shallow well is dangerous as a source of drinking water if not treated. Location of pit latrine near a well contaminates water. Domestic water should be purified through:

- Boiling
- Filtration and
- Adding chemicals e.g. alum

### 1.11 EVALUATION

**Table 1.** Awareness of indiscriminate defaecation with respect to gender

| Sex                     | Male      | Female   | Total    |
|-------------------------|-----------|----------|----------|
| <b>No. aware (%)</b>    | 35 (47.3) | 36(48.6) | 71(95.9) |
| <b>No. not aware(%)</b> | 1(1.4)    | 2(2.7)   | 3(4.1)   |

**Table 2.** Food handling with respect to gender

| Sex                                           | Male     | Female   | Total    |
|-----------------------------------------------|----------|----------|----------|
| <b>Hand washing before handling food (%)</b>  | 33(44.6) | 39(52.7) | 72(97.3) |
| <b>Food Handling without hand washing (%)</b> | 0(0.0)   | 2(2.7)   | 2(2.7)   |

**Table. 3** Age specific awareness about the effect of indiscriminate defecation and handling

| Age                                           | 1-10   | 11-20    | 21-30    | >30      | Total    |
|-----------------------------------------------|--------|----------|----------|----------|----------|
| <b>No. aware (%)</b>                          | 4(5.4) | 19(25.7) | 24(24.3) | 26(35.1) | 71(95.9) |
| <b>No. not aware (%)</b>                      | 2(2.7) | 1(1.4)   | 0(0.0)   | 0(0.0)   | 13(13.1) |
| <b>Hand washing before handling food (%)</b>  | 3(4.1) | 18(24.3) | 24(32.4) | 27(36.5) | 72(97.2) |
| <b>Food Handling without hand washing (%)</b> | 1(1.4) | 1(1.4)   | 0(0.0)   | 0(0.0)   | 2(2.8)   |

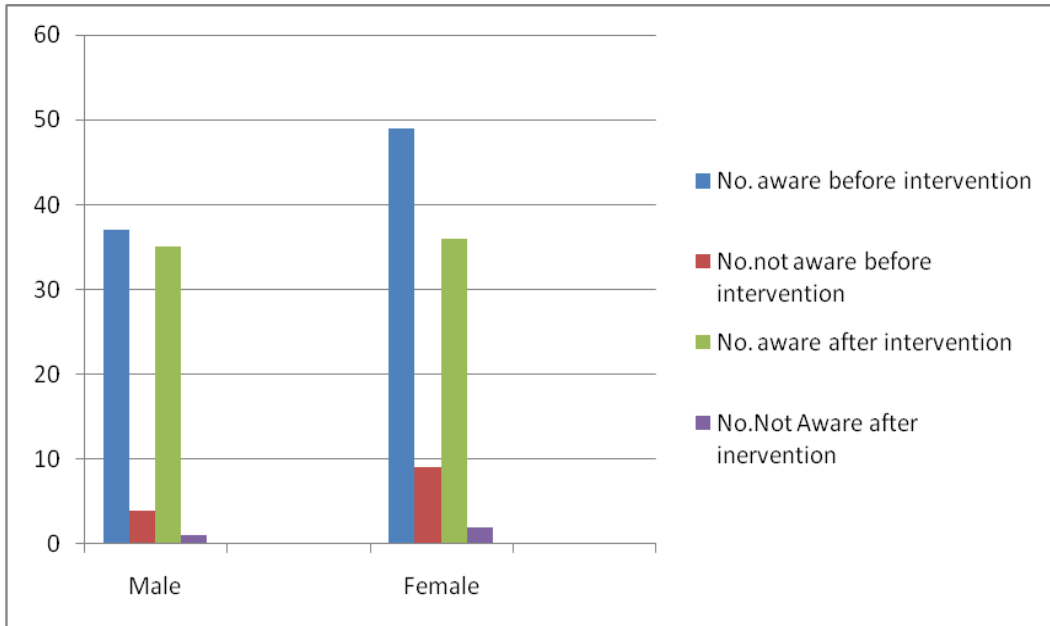
**Table.4** Awareness about the effect of indiscriminate defaecation and food handling with respect to occupation

| <b>Occupation</b>                             | <b>Civil servant</b> | <b>Students</b> | <b>Farmers</b> | <b>Traders</b> | <b>Total</b> |
|-----------------------------------------------|----------------------|-----------------|----------------|----------------|--------------|
| <b>No. aware (%)</b>                          | 6 (8.1)              | 14(18.9)        | 45(60.8)       | 6(8.1)         | 71(95.9)     |
| <b>No. not aware(%)</b>                       | 0(0.0)               | 0(0.0)          | 2(2.7)         | 1(1.4)         | 3(4.1)       |
| <b>Hand washing before handling food (%)</b>  | 7(9.5)               | 10(13.5)        | 51(68.9)       | 4(5.4)         | 72(97.3)     |
| <b>Food Handling without hand washing (%)</b> | 0(0.0)               | 0(0.0)          | 2(2.7)         | 0(0.0)         | 2(2.7)       |

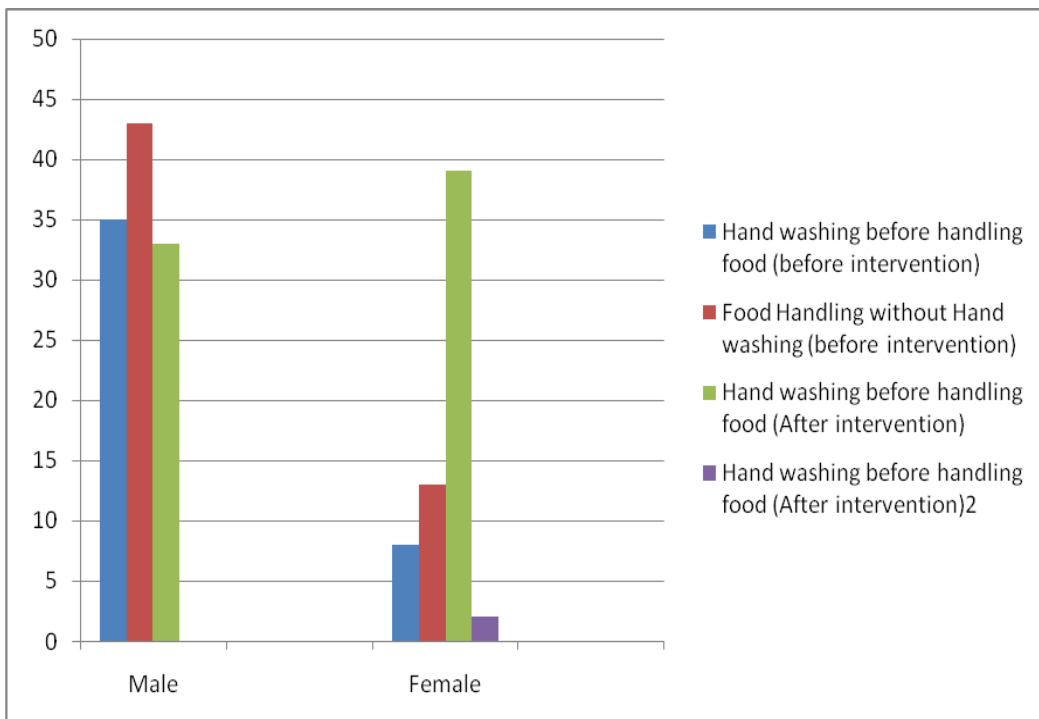
**Table. 5** Human excrement within 10m Around households

|                                                    |                 |
|----------------------------------------------------|-----------------|
| <b>No. of Household with human excrement (%)</b>   | <b>1(2.1)</b>   |
| <b>No. of household without human excrement(%)</b> | <b>47(97.9)</b> |
| <b>Total (%)</b>                                   | <b>48(100)</b>  |

After intervention, 1(2.1) household have human excrement within 10m whereas 47(97.9) do not. Awareness of indiscriminate defaecation and food handling with respect to gender



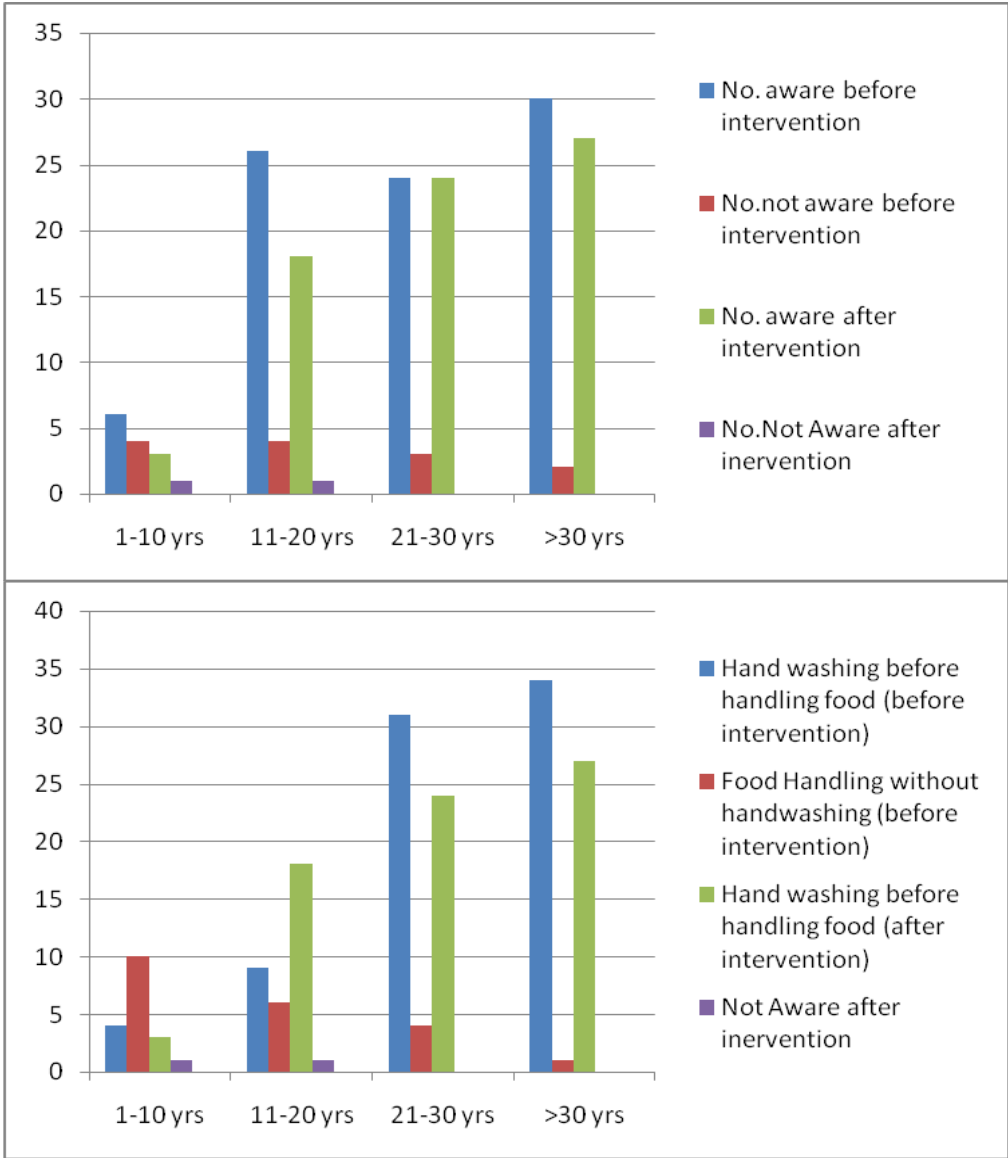
Based on the above histogram, the number of female not aware of the effect of indiscriminate defecation and food handling is higher in female than male and the percentage increase is higher than that of males after the intervention.



The level of awareness is high in males than females, the female members of the community who

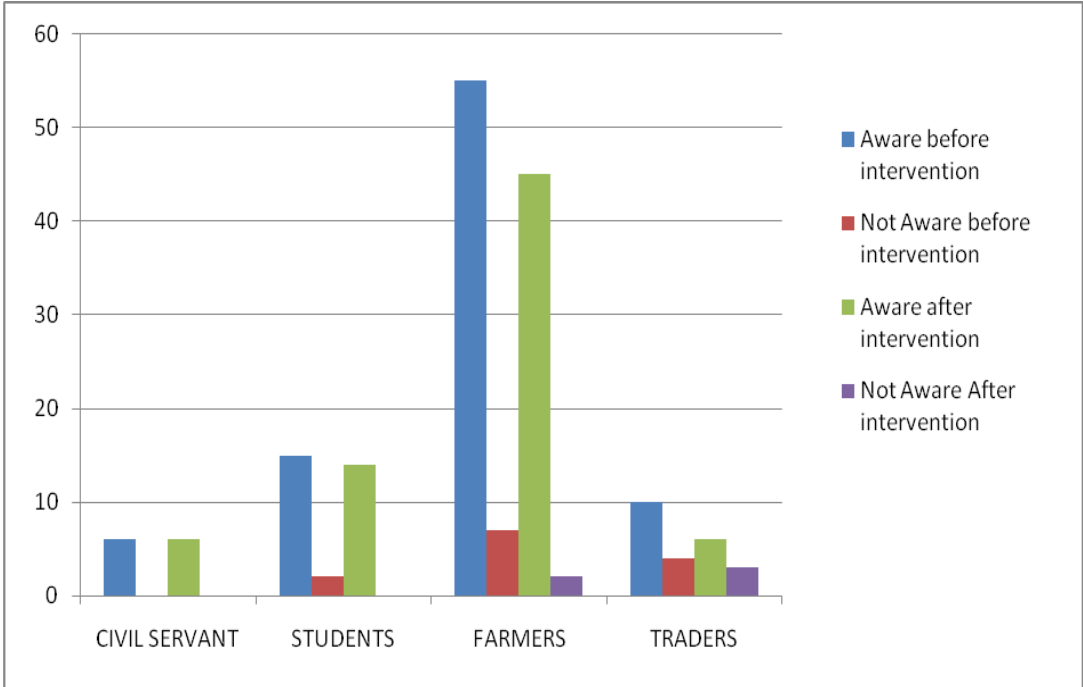
are mostly the food handlers have higher awareness the effect of hand washing even before the intervention. Interesting to know, after the intervention, the whole males that were evaluated were found to be all aware, therefore the level of lack of awareness was reduced to zero.

Age specific awareness about the effect of indiscriminate defaecation and food handling

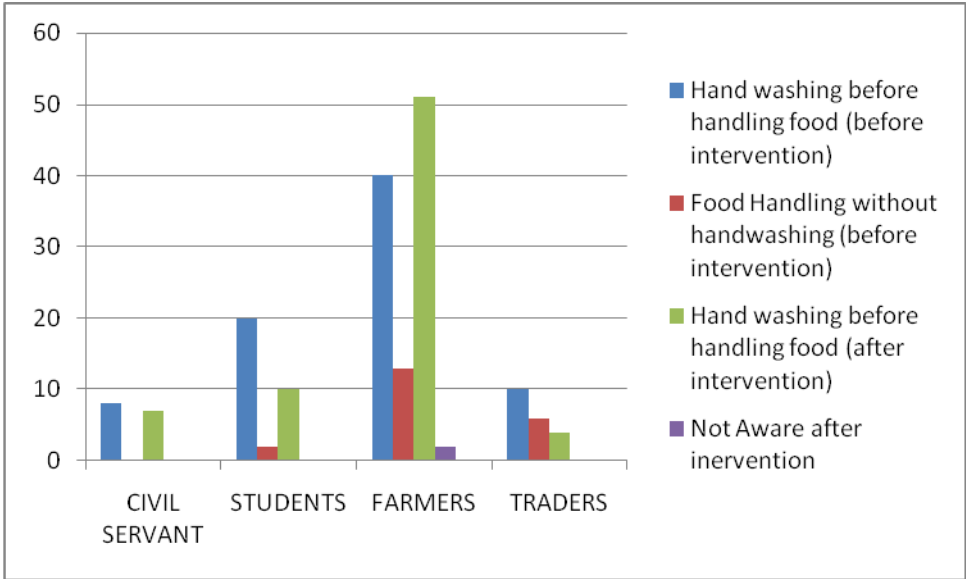


From the above graph the adults (21>) were all aware of the effect of handling food without washing hands after the intervention. The children were the least to be interviewed but were found to have the highest level of unawareness.

Awareness on the effect of indiscriminate defaecation and food handling with respect to occupation

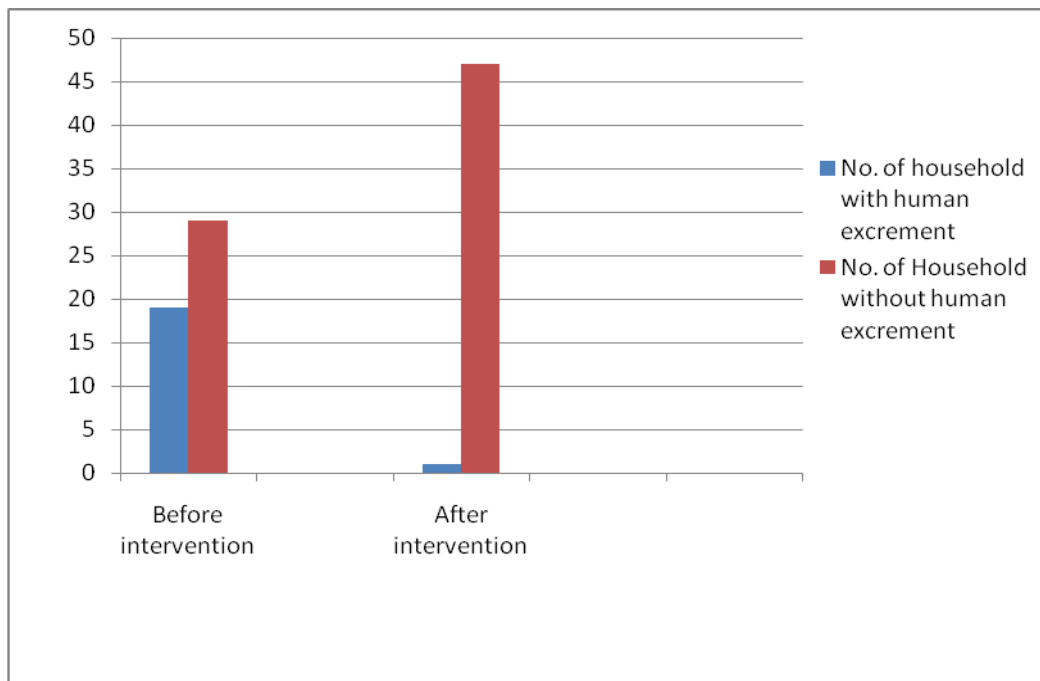


Certain percentage of unawareness on the effect of indiscriminate defeacation cuts across the various groups before the intervention. After the intervention, it was reduced to zero level in both civil servants and students while among farmers and traders, the level of unawareness was greatly reduced after the intervention.



Only among the farmers were people found to still be unaware of the effect of food handling without washing hands after the intervention.

#### Human excrement within 10m Around households



### 1.12 FINDINGS

To promote awareness on the effect of indiscriminate defaecation by 30%. The assessment result shows that a total of 13 people were not aware but after intervention programme, this number was reduced to 3 persons. This result shows that the intervention programme has succeeded increasing awareness on the effect of indiscriminate defaecation by 70%.

On food handling and hand washing only one person in the community was found to have had a change of behaviour towards this. This accounts for 7.5% against the 30% target. Reasons could be due to influx of people from other areas for farming purpose, since it is rainy season. Another challenge on the finding is that many of the people that participate in the campaign were not around during the assessment; some went on visitation while others went to

the market.

Surprisingly, of the 78 households observed 19 had human excrement in their surrounding but after intervention; only one household was observed to have human excrement within 10m of the surrounding. This could be because of a change in attitude of the people by burying faeces instead of allowing it to litter the environment which can be attributed to the intervention that was carried out.

### 1.13 RECOMMENDATION

- Due to continuous migration of people to and from the community, it is necessary to keep up the campaign.
- There should be continuous enlightenment and education in order for them to imbibe these set of good hygiene practices introduced to them
- At the end of the campaign, insecticide treated nets were distributed to the community members, it is necessary for the upcoming set to assess the proper and continuous use of the nets.
- It is necessary to encourage the community to built latrines which will really help reduce indiscriminate defecation and promote the health of the people.

### REFERENCES

- Black RE, Dykes AC, Anderson KE, et al. Handwashing to prevent diarrhea in day-care centers. *Am J Epidemiol* 1981; 113: 445–51.
- Curtis V, Cairncross S, Yonli R. Domestic hygiene and diarrhoea - pinpointing the problem. *Trop Med Int Health* 2000; 5: 22–32.
- Esrey SA, Habicht JP. Epidemiologic evidence for health benefits from improved water and sanitation in developing countries. *Epidemiol Rev* 1986;8: 117–28.
- Khan MU. Interruption of shigellosis by hand washing. *Trans R Soc Trop Med Hyg* 1982; 76: 164–68.
- Torun B. Environmental and education interventions against diarrhea in Guatemala. New York: Plenum Press, 1982.
- World Health Organization (WHO). Personal, domestic and community hygiene. [http://www.who.int/water\\_sanitation\\_health/hygiene/settings/hvchap8.pdf](http://www.who.int/water_sanitation_health/hygiene/settings/hvchap8.pdf)
- World Health Organization. The global water supply and sanitation assessment 2000. Geneva: WHO, 2000.

## APPENDIX 1

**Instruction:** please kindly tick (✓) the option that correctly fits your answer

### SECTION A

1. Sex: male [ ] Female [ ]
2. Age: 1-10 [ ] 11-20 [ ] 21-30 [ ] 30 and above [ ]
3. Occupation: Civil Servant [ ] Farmer [ ] Student [ ] others [ ]
4. Marital Status: Married [ ] Single [ ] Widow/Widower [ ] Divorced [ ]
5. Religion: Islam [ ] Christianity [ ] Traditional [ ] others [ ]

### SECTION B

1. Are you aware of the effect of indiscriminate defaecation? Yes [ ] No [ ]
2. Will indiscriminate defaecation around the household affect your health? Yes [ ] No [ ]
3. Raw food can be eaten without hand washing? Yes [ ] No [ ]
4. Washing of hands before eating food has a positive impact on health? Yes [ ] No [ ]

## APPENDIX 2

### QUESTIONNAIRE-HAUSAVERSION

#### SASHI NA DAYA

1. Haihuwa: Miji [ ] Mace [ ]
2. Shekaru: 1-10 [ ] 11-20 [ ] 21-30 [ ] 30 zuwa sama [ ]
3. Aiki: Ma Aikachin Gwamnati [ ] Manomi [ ] Dalibi [ ] Dan kasuwa [ ]  
Sauransu [ ]
4. Aurataya: Magidanchi [ ] Gomro/gomruwa [ ]
5. Adini: Musulmi [ ] Christa [ ] Gargagiya [ ] Sauransu [ ]

#### SASHI NA BIYU

1. Ka/ki san da illan ba haya inda bai dace ba ayi? ii [ ] a'a [ ]
2. Yin ba haya a wurin da bai dache ba musammman a makabta zai shafi lafiyan ka/ki?  
ii [ ] a'a [ ]
3. Ana iya cin yayan ice ba tare da an wanke hannuwa ba? ii [ ] a'a [ ]
4. Wanke hannuwa kafin cin abinci na mahimmanci ga lafiyar ka/ki? ii [ ] a'a [ ]

**APPENDIX 3**

**FIELD/EPIDEMIOLOGY FORM**

| S/N | Number of households | Human excrement within 10m | Absent (A) |
|-----|----------------------|----------------------------|------------|
|     |                      | Present (P)                |            |
| 1   |                      |                            |            |
| 2   |                      |                            |            |
| 3   |                      |                            |            |
| 4   |                      |                            |            |
| 5   |                      |                            |            |
| 6   |                      |                            |            |
| 7   |                      |                            |            |
| 8   |                      |                            |            |
| 9   |                      |                            |            |
| 10  |                      |                            |            |
| 11  |                      |                            |            |
| 12  |                      |                            |            |
| 13  |                      |                            |            |
| 14  |                      |                            |            |
| 15  |                      |                            |            |
| 16  |                      |                            |            |
| 17  |                      |                            |            |
| 18  |                      |                            |            |
| 19  |                      |                            |            |
| 20  |                      |                            |            |
| 21  |                      |                            |            |
| 22  |                      |                            |            |
| 23  |                      |                            |            |
| 24  |                      |                            |            |
| 25  |                      |                            |            |
| 26  |                      |                            |            |
| 27  |                      |                            |            |
| 28  |                      |                            |            |
| 29  |                      |                            |            |
| 30  |                      |                            |            |
| 31  |                      |                            |            |
| 32  |                      |                            |            |
| 33  |                      |                            |            |
| 34  |                      |                            |            |
| 35  |                      |                            |            |

**APPENDIX 4****BASELINE DATA****Effect of indiscriminate defecation**

Percentage of awareness 86.9%

Not aware 13.7%

**Evaluation**

Percentage aware 95.9%

Not aware 4.1%

Percentage change aware =  $95.9 - 86.9 = 9\%$

Percentage change not aware =  $13 - 4.1 = 9$

30% - Bench mark = 30%

% change not aware = 9%

% aware = 91%

$91 - 70 = 21\%$

That is  $30 - 9 = 21\%$

$21/30 \times 100 = 70\%$

**Hand washing**

% of Hand washing before handling food = 78.8

% of food handling without Hand washing = 21.2

**Evaluation**

% of Hand washing before handling food = 97.3

% of food handling without Hand washing = 2.7

% change of Hand washing before handling food =  $97.3 - 78.8 = 18.5$

% change of food handling without hand washing =  $21.2 - 2.7 = 18.5$

Bench mark = 20%

-80%

% of food handling without hand washing = 18.5

% of Hand washing before handling food = 81.5

Therefore  $81.5 - 80 = 1.5$

That is  $20 - 18.5 = 1.5$

Percentage is  $1.5/20 \times 100 = 7.5\%$

**Human excreta within 10m of the household**

No. Of Households with Human excreta = 39.6

No. Of Households without Human excreta = 60.4

Evaluation

No. Of Households with human excrement = 2.1

No. Of Households without human excreta = 97.9

% of change of households with human excreta =  $39.6 - 2.1 = 37.5$

% of change of households without human excreta =  $97.9 - 60.4 = 37.5$

10% bench mark = 10%

90%

% of households without human excreta = 37.5

% of households with human excreta = 62.5

Therefore  $90 - 62.5 = 27.5$

$37.5 - 10 = 27.5$

$10/2.7 \times 100 = 36.4\%$