

PEOPLE-CENTRED APPROACHES TO WATER AND ENVIRONMENTAL SANITATION

## Some lessons learned about how to study hygiene behaviours

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*Behaviours are challenging to study as the accuracy of the information collected can be compromised by the collection tools used and the way they are applied. This paper contains some suggestions, drawn from the research, about studying hygiene behaviours. These are framed in terms of “lessons learned” with a focus on training field workers, observations, open questions, measuring time and actual practice, demonstrations, sampling, comparing data.*

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### Introduction

From 2000 to 2003, NETWAS International undertook research to study the sustainability of hygiene behaviours with partner institutions in six countries. The research combined participatory and traditional data collection procedures and its results are reported elsewhere (Cairncross, 2004). This paper contains some suggestions, drawn from the research experience, about studying hygiene behaviours within communities. These are framed in terms of “lessons learned” with a focus, in particular on ensuring that the data collection protocols provide valid information while, at the same time, going beyond being purely extractive methods of data collection.

Behaviours are challenging to study as the accuracy of the information collected can be compromised by the collection tools and the way they are applied. In other words, it is far too easy to solicit responses or observe phenomena that do not, in fact, represent the actual behaviours of the households and people in the study. Some of these suggestions may be useful in improving the quality of the data being collected.

The data collected in the studies relates to behaviours such as handwashing, latrine use and maintenance. Handwashing and latrinization are rather complex activities, requiring:

- Knowledge, for example, about the critical times for handwashing from the point of view of health
- Skills to wash hands correctly, using soap or ash, water and rubbing both hands or about how to use a latrine.
- Practice in which the knowledge and skills are applied consistently.

Because many behaviours have knowledge-skills-actual practice dimensions, all three of these aspects deserve to be measured if one is studying hygiene behaviours.

### Some lessons learned

*Lesson 1: Plan the sampling before the study begins.*

Basically, sampling means identifying a subset that will reflect the whole population. For example, if you have different foods in your dish, like rice and vegetables and meat, then you need to taste a spoonful of each one to know if you like each one. The spoonfuls are the sample. It is the same in studies, however, the bigger the sample the more accurate and more precise the results (note 2).

In our studies, we first selected the communities. This was done by listing a number of characteristics of communities that we wanted to have included in the sample. Examples are size of community, ethnic groups, water situation, location near or off of roads. Then communities should be selected that have each of these different characteristics, to the extent possible, in proportion to their occurrence in the whole population. For example, if about one-third of the population lives in water-deficit communities, then about one-third of the sample should also. However, the survey should remain manageable, which means there should not be too many communities scattered over a wide area.

### Selecting the households to survey in a community

The next step was the random selection of the units, usually households, in the community. In our study, this was done in one of two ways:

- Selecting the households from a list of all beneficiary households, or
- Selecting households by choosing a starting point such as the center of the community or a water point, then throwing a pen in the air, or spinning a bottle on the ground to choose the direction to be followed. Then every third or fifth household was selected in that direction until the edge of the community was reached. This was repeated until the desired number of houses had been sampled. We also took precautions to visit the households at times

when most of the people would be at home.

In some cases it is not possible to select all households at random. For example, in our study, after sampling 100 households, if less than half had latrines, then we understood purposeful selection of households with latrines, but not only from the richest houses.

### Sample size

As a rule of the thumb, for results to be accurate at the 95% level ( $p=0.05$ ), then the sample size should be:

- About 390 for each main ethnic group, to ensure a confidence interval of plus or minus 5% (+ or – 5%). This means that if, for example, 70% of the people say “yes” to a question, then this result, if you do the survey another time, will very likely (95 out of 100 surveys) be between 65% (70% - 5%) and 75% (70% + 5%).
- About 270 for each main ethnic group to ensure a confidence interval of plus or minus 6% (+ or – 6%).
- About 150 households to have a confidence interval of about plus or minus 8%.
- About 100 for a confidence interval of plus or minus 10% (See note 2).

In addition to sampling households, we found it very useful to have groups discussion, for example, with women’s groups and with key informants.

*Lesson 2: Plan the analysis before the study begins. Be gender and poverty sensitive. Disaggregate the data.*

Enough time should be planned for data analysis from the beginning. As a “rule of the thumb” the analysis requires as much or more time than the planning and data collection of the study.

It is very important to break the data down by for different groups such as women or men and rich or poor and different ethnic groups. Breaking down the data (disaggregation) is needed because these each group may have different behaviours, roles, knowledge, and so on. For example, we looked at sustainability of men’s and women’s behaviours separately in some of our 6-country studies. In the Indian study, all data was separated for male and female responses. In the Nepal and Ugandan studies, all discussion groups, where information was collected, were held with men and women separately. The results showed that showed that women and men should both be the focus of the hygiene promotion intervention. Involving only women in the hygiene activities does not mean that men will automatically follow to develop new, safer health behaviours (Zacharia, 2004).

*Lesson 3: In collecting information, empathize and be polite. Think about how the respondents feel.*

Although it may appear obvious that the field workers who collect information should be polite and empathize with people who provide information, it still seems that this is

overlooked too much research and monitoring. It is important to remember that people are doing us a favour by letting us ask questions and observe their households.

In our study, particular attention was paid to this aspect during the training of the field workers before the main data collection began. To a certain extent the quality of the data is a function of how well the field workers are trained and supervised. This is an excerpt from a report showing how the field workers were trained to develop the “attitude” that was needed (Karanja, 2001)

The enumerators felt that it was important that at each homestead visited, we practice accepted cultural norms that must be observed by visitors. One way was to do the following: start by self introduction and by explaining purpose of the visit. It was important to state not only the purpose but also the circumstances that led to the selection of their house and not the neighbors. Also it was agreed that courtesy demands that we indicate how long our visit would take and establish if we were welcome to commence our work.

Rehearsals were also carried out on how to actually conduct the exercise in the field. The rehearsals were mainly done through role plays, where the enumerators took turns for different settings. (Karanja, 2002)

*Lesson 4: To observe physical evidence of behaviours, directions should be concrete and open to as little misinterpretation as possible.*

Many studies of hygiene behaviours include observations in the household; and we found it useful to make the directions for these observations as concrete as possible. Thus words such as “good” and “clean” were avoided as they are open to multiple interpretations. Something which is “clean” to one person may not be clean for another. This is an example of an item used to collect data about latrine cleanliness and maintenance.

One implication of the need to be concrete in defining the variables is that some tools may need to be modified to ensure relevance for different ethnic groups and different situations. This need not be a great problem but means that the features one observes for variables such as a “clean” latrine or “safe” water storage may differ from one situation to another.

*Lesson 5: To study knowledge and attitudes open-ended questions can be useful.*

#### Box 1. Defining “clean latrine”

Observe for latrine use

- Is the latrine floor free from visible faeces?
- Are the latrine walls free from holes that you can see through?
- Is the latrine door/cover in place?

Source: Karanja, 2002.

When people talk about what they know, feel or believe, special care needs to be taken not to inadvertently lead them to certain answers. This can happen if the person or group giving an answer wants to please the enumerator or believes it would be advantageous to give a certain answer. Inaccurate responses can also result if the questions are too difficult to answer accurately.

There are several approaches to improve the data collection items and the validity of the information being asked. For example, it is common in participatory assessment procedures for a group of people can be asked to rate their group preference or experience from among a set of alternatives. The assumption is that the individuals in the group will discuss and check or clarify each other's responses.

Another approach is to use open questions that can be easily coded. An open question is one to which the person can respond in many different ways. Here is an example of open questions used in a tool to determine whether hygiene information provided to the child in school is shared with the mother at home. This information can be useful in gathering evidence about the effectiveness of hygiene education. The following questions are asked in the sequence shown here; and the second question (marked "20") is coded into the data entry sheet.

	Do your children learn anything about water, sanitation and cleanliness in the school?
20	What things do they learn (tick if woman says 2 different things)

**Figure 1. Open questions**

Source: Karanja, 2002.

*Lesson 6: Making comparisons is a useful technique to study time and distance.*

In water and sanitation projects, we often want to know about time and distance, for example, to measure access to water sources. These measurements are subject to error. One person's estimate of "5 minutes" or 100 meters may be very different and not comparable to another person's.

<b>Questions for mother or woman in household about water</b>	
Please think of the time it takes to prepare ugali. Does the round trip to collect water take more or less time than to prepare ugali.	
1	about the same time
2	much more time
3	much less time

**Figure 2. Estimating time**

Source: Karanja, 2002.

We would suggest measuring time and distance by making a comparison with something that is known and common for many people. In the example below, the amount of time required for a round trip to collect water is compared to the time it takes to cook the staple food (ugali) for the family. This is approximately one-half hour.

*Lesson 7: Studying actual practice through pocket voting protocols.*

The pocket voting tool is used to let people, without being seen by others, declare a preference or indicate their practice, for example, in handwashing or latrine use. To do this they place a "voting" paper in a pocket or envelop that corresponds to a picture representing one particular option. The actual voting should be done out of the sight of other people. The pictures and options need to be discussed and explained carefully first. This usually done in small groups, in the form of a participatory tool. We found that pocket voting, a fairly well known tool, was a useful way of collecting information about personal behaviours(see note 1). This is an example of the directions of pocket voting in the questionnaire:

<b>Refer to climate setting protocol and explanation Pocket voting</b>	
Handwashing practise - after defeacation, after handling childrens feaces, before eating.	
Sets of posters/photos showing a) handwashing in practise using water and soap/ash, b) handwashing practise using water only, c) no handwashing	
1	scored for handwashing with water, soap/ash
2	scored for handwashing with water only
3	scored for no handwashing at all

**Figure 3. Pocket voting as shown in data collection format**

Source: Karanja, 2002.

Pocket voting is usually done in small groups. However, this can present one research problem as the people in the group may not be the same as those visited in the homes for observations and so on. This means that the data collected in the two settings (small groups and household) may not be strictly comparable. In our study, colleagues from the Socio-economic Units Foundation in Kerala developed a method of pocket voting in the household (Zacharia, 2001). This had the advantage in that the results could be compared with other data collected in the same home.

*Lesson 8: Demonstrations are useful to measure handwashing skills.*

We found that the measurement of handwashing skills, to be reliable, should be done using a demonstration. People have difficulties describing how they do something but can more easily show it in a demonstration. The procedure should

<b>Handwashing demonstration</b>	
Directions for demonstration	
<ul style="list-style-type: none"> <li>→ Ask mother if it is okay to demonstrate handwashing</li> <li>→ Do not correct the mother on her practice or talk during the demonstration</li> <li>→ Praise and thank the mother after completing the demonstration</li> <li>→ Code the observation afterwards, not in front of the family</li> </ul>	
6a	Can the mother get all the things needed for handwashing together in about 3 minutes (time it takes to count up to 180)?
6b	Does she use/apply soap or ash to both hands?
6c	Does she rub both hands?
6d	Does she use at least one cup of water to wash and rinse her hands
6e	Does she wash hands without prompting from other members of the family?
6	subtotal

**Figure 4. Handwashing demonstration protocol**

Source: Karanja, 2002.

be done in the home, in an area where people normally wash hands. It is not time consuming, although the directions need to be followed carefully. An example of these appears in Figure 4.

*Lesson 9. Compare the results. Sometimes even data from small size samples can be illuminating.*

To reach meaningful results it is important not just to add up the totals. Comparing the behaviours in the household with other variables can be useful. For example, in our 6 country study, we saw that the end dates of the projects were not related to the consistency of handwashing practice. This means that we compared the results, on the one hand, about good handwashing (both hands with soap/ash and water) after defecation according to pocket voting, with, on the other hand, the years elapsed since the end of the project in that community. People living in the communities where the intervention had ended recently, say one or 2 years before the survey, did not have better handwashing practice than people living in communities where the project ended four or more years ago (Shordt, K. 2004). This was one form of evidence to show that the handwashing behaviour appeared to be sustained over time.

Another example shows that even if the sample is small, it is possible to derive some potentially useful results. A project trained women's groups, on the assumption that these trained women would share the information with others. The study was done with 4 trained groups (80 people in all) selected from locations that were meant to be representative. The questions were:

- Did you hear about the importance of a latrine from
  - Government and agency workers?
  - From neighbours or members of other women's groups?

The results showed that 95% (77/80) of the intervention group heard about latrines from government and agency workers while 36% (29/80) got information about latrines from neighbours or women's group members. The difference is highly significant (OR=34.5). This put into doubt the assumption that the trained women were sharing information with other women. It was therefore suggested that the project study this further and perhaps change its strategy. (Karanja, 2002b)

*Lesson 10: Feed the results of the study back to the community.*

Research studies must not be purely extractive. We have developed the practice of quickly feeding the results of a study back to the community and the project leaders. This is also motivational as it leads to discussions and planning for how to resolve challenges that have been pinpointed in the research study. Telling the community and the project management about the results of the study also serves as a way of checking the validity of the data. It is, in our experience, essential to share the main results of a study with our partners in the communities and programme management as soon as possible after the data is collected.

## Notes

1. One indication of this appears in the paper by Zacharia which shows that the results of pockets voting for handwashing measuring actual practice were lower than skills as shown by a demonstration and knowledge of critical handwashing times. This fits with our expectation that practice should normally be less than knowledge or skills and is one indication of the validity of the tool.
2. To help select the sample size, there are also internet programmes such as: <http://www.surveysystem.com/sscalc.htm> and <http://www.home.clara.net/sisa/sampshlp.htm>

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