

# Rapid assessment procedures in formative research for a communication intervention on water-related hygiene behaviours

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The Institute of Nutrition of Central America and Panama (INCAP) is presently conducting an evaluation of the impact of an improved water supply system on the water-related behaviours and diarrhoeal disease in children under three years of age in a highland Indian community in Guatemala. This project also includes the development of an education-communication intervention to augment the expected impact.\*

The project is being implemented in three phases. In phase 1 an evaluation of the association between behaviours related to the availability and the use of water and diarrhoea in children 0-35 months of age was conducted. Among other results, the evaluation identified two behavioural indicators or products of behaviour positively and significantly associated with diarrhoea rates: the hands of the mother being visibly dirty, possibly an indicator of her not having washed them recently or washing them infrequently, and the presence of uncovered water containers in the house, an indicator of inadequate handling of water.

Phase 2 will consist of designing and implementing the education-communication intervention. To improve hygiene behaviours, however, we needed, in addition to gathering epidemiological data, to understand better the beliefs, attitudes, motivations, and

behaviours related to the use of water in this community. Therefore, a qualitative formative study (one designed to give form to an intervention) was undertaken using rapid assessment procedures (RAP).

The main objectives of this research were as follows:

- » To obtain in-depth information on beliefs, perceptions, and motivations with regard to water, and the behaviours related to the handling and use of water, especially those identified as important in phase 1 of the study: hand washing and water storage.
- » To obtain information on the communication characteristics of the population, communication agents, and main communication channels. These themes are of special interest for communication-education interventions.
- » To test ideas and products for a communication-education intervention.

The most relevant findings on water-related beliefs and behaviours are reported here. The communication aspects and the testing of ideas and products for the education-communication programme are considered only briefly.

## Methods

The study site was Santa María de Jesús, a Cakchiquel Indian community of 11,000 people on the slopes of Agua volcano. The sample for the first phase of the study consisted of 200 mothers with children under three years of age who had water taps and latrines in their homes; it was expanded to 300 mothers with such characteristics for the intervention phase. For the qualitative research, 40 mothers with children with a high frequency of diarrhoea and hygiene behaviour categories were selected. This purposive sample, with emphasis on both positive and negative morbidity patterns and behaviours, was

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\*Bartlett AV, Hurtado E. Introduction of piped water in traditional rural Guatemalan households: evaluation of impact on behaviors related to water and on diarrhea, with development of an education intervention to increase this impact. Unpublished document, INCAP, Guatemala City.

expected to offer the greatest insights into the themes of interest.

"Rapid assessment procedures" implies a judicious combination of anthropological and other qualitative research techniques to obtain in-depth answers about beliefs, perceptions, attitudes, motivations, and behaviours of people. The particular rapid anthropological procedures mix used included the following:

- » Key informant interviews with the town's mayor, a nurse at the health post, and the rural health technician about the water and hygiene conditions in the community and the new water system, and their perceptions about people's behaviours.
- » In-depth interviews with 40 mothers about their explanatory models of diarrhoea, the role attributed to water and personal and domestic hygiene, and the beliefs, motivations, and logic behind their behaviours.
- » Focus group discussions with health promoters and midwives, who have been exposed in one way or another to the scientific disease causation model and to desirable hygienic practices and have been instructed to share their knowledge with their families and the community at large. It was desirable to take advantage of their experience in health education and learn about the facilitating and constraining factors they have encountered.
- » Focus group discussions were organized with additional mothers and schoolchildren. In the groups with mothers, different aspects of the main topics were discussed and rapid product testing was undertaken. In the groups with children, child care was explored, including whether any hygienic practices are or are not part of it. The standard methodology for conducting focus groups was modified so that, after an abbreviated discussion of one topic, the children would make drawings about it and then explain them to the moderator. Also, exercises and songs were used with the children.
- » Group discussions were held with the interviewers and observers of the previous risk-factors study to take advantage of their knowledge of the beliefs and practices of the mothers.
- » Field workers were trained to collect information by means of informal conversations and observations about the topics of interest and to register that information in detailed field notes.
- » Observation was conducted throughout the study period while walking in the community, talking and interviewing, and during product testing.

Three types of instruments were used: individual interview guides, focus group discussion guides, and observation guides.

The research was carried out by the principal investigator in July and August 1990.

## Water-related beliefs and behaviours

### Water sources

Three water sources were being used simultaneously in Santa María: 22 public taps located in several places in the town, home taps located in the patios of participating households (a new and supposedly improved water supply system), and rainwater during the rainy season, when the research was conducted.

Water from the public taps comes from several springs. With few exceptions it flows permanently; sometimes, however, especially during the dry season (November–April), the volume is considerably reduced. Water from the new system comes from a deep well and is transported through pipes by two diesel pumps. Presently this system works for a few hours every three days.

To collect rainwater, people have installed channels at the edge of the tin roofs of their houses into which rain runs and falls into a barrel. Families who do not have this system say it is because they do not have the money for it.

Reasons given by families for installing the new water system had to do, for the most part, with saving the effort and time of hauling water from a public tap, especially for the women. During the late dry season they have to get up very early in the morning (sometimes at 2 or 3 a.m.) to get water, they have to know when the line at the public tap is not too long, and they have to be attentive all the time as to how much water they have at home. Thoughts of increased hygiene and health for the family were not apparent in the responses. Families who were not connected to the new water system said that it was too expensive (quality-of-housing data indicated that these households were indeed somewhat poorer) or, in a few cases, that a public tap near their home made the expense unnecessary.

In general, people think that the water from both the public and the private taps is clean and can be drunk just as it comes out. This assessment is based mostly on its clear appearance. Opinions about rainwater are more diverse. Some people think it can be dirty because it runs over the roof and through the channel, which are dirty with dust, stones, and other objects and are walked on by animals. Some people therefore will not use the water from the first rains for drinking and cooking but only for other purposes, but they do use it once the roof and channel are cleaned. Others will not use rainwater for drinking or cooking at all but only for other purposes. A few report that if they were to use rainwater for drinking they would boil it. Independent of their perception of the quality of rainwater, or of the use to which they put it, most of the people ex-

press gratefulness to God for it and collect it because "one cannot despise it"; it is "God's blessing."

### Carrying water

The water from the public taps is carried in plastic jars, mainly by women and adolescent girls. In general, when the women go to the taps, they hold their jars by the handles. At the tap, they sometimes wash the jars both outside and inside. Sometimes when the jars are full, they remove excess water with their hands. The filled water jars are carried on the head and are seldom covered.

It is not uncommon to observe young children, even five-year-olds, helping in this task. They generally carry the jars not by the handles but by one hand placed inside. On their way to the tap they are frequently distracted to watch something, play, or buy something in the store, where they leave the jars on the floor. Once at the tap, they put their hands in the jars to wash, drink, and remove excess water. Finally, on their way back home, they often leave the filled jars on the road, again to rest or play.

In the focus groups of women and children, the question of how to care for water while filling jars and carrying it was asked repeatedly. The answers always were to hold the jar so that it would not fall, to watch one's step so that one would not fall, and to walk carefully so as not to get wet. There were no comments about handling the water itself, no matter how the question was asked. Mothers instruct children not to drop the jar and not to stay playing but to return home promptly.

The plastic water jars are sold with lids in the town's stores. However, the stores are the only place where one observes them covered. When asked, mothers reported that the children take the lids to play with, that they get lost, and that it is too much effort to open and close the jars each time they want water.

### Storage and use

Water from the public and private taps and rainwater are stored in various containers. The women are extremely water-conscious and know exactly how many jars of water fill their larger vats, barrels, and basins. They also know the precise amounts necessary for cooking and various household chores.

As water was central to the study, in the process of data collection and examination of the field notes it became possible to recognize a cultural domain: kinds of water. In addition to being identified by source, water is classified according to the place and type of vessel in which it is stored: "inside water" (water kept inside the house or for use in the house)

and "outside water." The taxonomy developed shows the relationship between these categories and the ideal care associated with each.

### Inside water

Inside water comes mainly from the public or private taps and is stored in large earthen jars. These traditional jars are slowly being replaced by plastic ones; in a survey of 288 houses, 72% had these jars. They are considered better for inside water than other types of vessels because they keep water fresh, with a good taste and smell. Inside water is used mainly for cooking and drinking, which probably explains why in the risk-factors study the presence of uncovered water vessels inside the house was associated with higher rates of diarrhoea in children.

When women were asked about the care one should take of inside water, most of them spontaneously said that the jars should be covered so that dirt cannot fall into the water. Dirt is mostly perceived as dust from earth floors and the outside, and animals such as rats, which all houses have. Most women said dirtiness "brings on illness," and some specifically mentioned diarrhoeal diseases. The cover used for the water jars can be a piece of plastic, a piece of cloth, a mat, a board, or a pot lid. The last is preferred as it fits the earthen jars better and has a handle. Although most women recognize the need to cover the inside water jars, some do so and others do not.

Dirt accumulates in the bottom of the jars even when they are kept covered. The women said that they wash the earthen water jars every three or four days when they are empty. Some wash them with a brush and soap on the inside and outside; others wash them with brush and soap only on the outside and with water on the inside because otherwise both the jars and the water smell of soap. The investigator did not observe water jars being washed.

Inside water is used for drinking. Sometimes it is drunk without being heated—usually when the day is hot, when people return from work, or when they take water to the fields. Most water is drunk in coffee. Very few families boil water. In the survey of water storage vessels, 37% of the respondents said they boiled water, but only 8% had any boiled water in the house at that time.

Inside water is also used to prepare food, cook corn and black beans, and make broth. Women also use this water to wet their hands while making tortillas, to wash the vegetables and herbs that go into soup, to wash meat when there is any, and sometimes to wash dishes.

The water is taken out of the earthen jar with a utensil that can be a plastic or metal jar or a pitcher. Women say that that utensil is used only for drawing

water and that water is drawn only with that utensil, so that the water does not get dirty. For the same reason they prefer a utensil with a handle (a pitcher). Traditionally, it is supposedly always kept in a special place, such as on a forked pole set upright or hung close to the water jar, hung from a nail on the wall, on the board used to cover the jar, on a table next to the jar, or inside the jar ("Since it is plastic, it floats"). The women who put the utensil inside the jar reason that it is safer because that way it is only used for the water, and flies do not stand on it. One woman, as she was explaining this, stopped, thought a moment, and commented, as if realizing it for the first time, that the bad thing was that they had to put their hand in the water to get the pitcher out.

Women are aware that having the utensil in only one place prevents it from getting dirty and dirtying the water. However, just as happens with the jar tops, some utensils were observed to be in their place and some were anywhere in the house, even on the dirt floor. The women explained that the problem was that the children would use it and not put it back in its place.

#### *Outside water*

Outside water is stored in metal and plastic barrels, basins, plastic jars, and other vessels. The number and variety of receptacles present in some of the houses is amazing. Furthermore, some women commented that, with the new water system, they need more vessels to store more water.

No particular care was mentioned with regard to outside water. The vessels in which it is stored are never covered. Women explain that it is not necessary since the water is not used for drinking or cooking and thus does not have to be as clean as inside water. In some cases, however, that very water is carried into the house to fill the inside water jar. Outside water is mostly used to wash clothes and dishes, water plants, wash hair and bathe, wash hands, and wash vegetables and fruits that will be taken to the market.

#### *Hand washing*

All the people interviewed knew about hand washing as a "clean" practice. However, dirty hands were not mentioned among causes of diarrhoea, nor clean hands among preventive measures. Notwithstanding, mothers and health promoters alike identified before eating and before eating a piece of fruit as the most important times to wash one's hands. This response appears to be a combination of the messages given by health personnel to wash hands and wash fruits before eating. Other times to wash hands are when one gets up in the morning, which is associated with washing one's face to wake up. Only the health

promoters, midwives, and one woman mentioned washing hands after using the latrine, and nobody mentioned doing it after diapering a baby or before breast-feeding or feeding a child with the hands.

Reasons given for washing hands were perceived dirtiness and, less frequently, contaminating dirtiness. That is, hands are washed when they look or feel dirty and when they have touched something considered dirty. Dirt or dust and money were mentioned as being dirty. Women did not identify social reasons for washing hands, such as before going out; rather they wash their legs and feet before going out and in the process wash their hands. They said that hands are washed before eating because eating with dirty hands is bad for you. In trying to specify why it is bad, some women and children mentioned that dirtiness is disgusting and can make one's stomach sick. Even if mothers recognize the importance of hand washing before eating, fewer than one-third of those observed in structured observations during the earlier risk-factor study and their children practised it.

The attitude toward washing children's hands was somewhat defeatist. Mothers said that children are always dirty because they play on and with dirt and that to wash them is futile because they will be dirty again the next minute. They also mentioned that children pay no attention when they are told to wash their hands.

It is difficult to observe hand washing as such in Santa María. Women feel they wash their hands every little while. In fact, their hands are in contact with water several times a day: when they carry it, when they wash clothes, when they make tortillas and cook, and when they wash dishes. But hand washing to eliminate contaminating dirt is done infrequently. That was why in the structured observations of the risk-factors study a category of "indirect" hand washing was established to allow the recording of all these contacts with water without the specific purpose of washing hands.

When hands are washed, however, the water is drawn from the outside barrel or basin. The jar with water is placed on the floor for children and on the washing basin or stone for adults. Hands are submerged in the water, and scrubbed and rinsed in it. Sometimes several children may wash their hands simultaneously or sequentially, reusing the water.

The majority of the houses had some kind of soap (in the water-vessels survey about 65% of families had soap at the moment). Soap is considered expensive, however, and is used only occasionally for washing hands. Only health promoters and midwives reported always using it for that purpose. A curer said she used it to remove oil that she applied when giving massages. Other women sometimes used soap for hand washing when their hands were very dirty.

Children are almost never given soap because "they waste it," "they play with it," and "they do not rinse their hands well." In addition, using soap means using more water, which is not desirable.

Mothers sometimes dry their hands with a towel after washing them. However, the observations revealed that they use very different materials (pieces of cloth, napkins, handkerchiefs, clothing) and that the towel is the least used of all. For example, during an interview, a woman said that she used a towel for drying her hands. However, when she had to wash her hands later on, she used a child's sweater that was lying on the floor. Still later she had to change a soiled diaper, and did not wash her hands afterward but continued weaving.

### Communication characteristics and product testing

The mothers wanted educational materials in both Cakchiquel (the local language) and Spanish, because "we live in Cakchiquel, but we learn in Spanish." They did not want to attend group meetings to receive messages but preferred home visits from local health promoters. However, they asked that the visits be short (around ten minutes each) because they had many things to do. They can spend more time talking when they are weaving, because they sit

with the back-strap loom for several hours at a time. The fathers' approval is critical for visiting mothers and for them to adopt any changes within the home.

One product considered for the intervention was the "tippy-tap," a simple hand-washing device made out of a plastic half-gallon or gallon bottle (fig. 1). It was tested during the formative research in several homes and at the INCAP centre in the community. This research established that the benefits perceived by users were that the tippy-tap uses less water than the usual method of hand washing and that it uses less soap, because the soap is not placed where it gets wet and soggy but hangs up and dries. An ideal place to hang the tippy-tap came out of the test, as well as the addition of a string to pull it when one wants water. Mothers gave it the Cakchiquel name *cachipop*.

The tests also indicated, however, that it is not easy to wash very young children's hands with the tippy-tap, and that a potential problem is that older children may play with the device, thus destroying it or wasting water. Although mothers did not mention it, it is recognized that the device requires extra water, time, and work to install, use, and maintain.

### Discussion

This presentation focuses on the use of RAP for three purposes: collecting descriptive in-depth information on water-related beliefs and behaviours to help establish an acceptable health communication-education intervention on water-related hygiene, identifying basic communication aspects in the community, and conducting a rapid test of ideas and an appropriate hand-washing product for the intervention. The first objective is one in which RAP has been applied most frequently. The second and third objectives used RAP to obtain data on communication themes and product testing that were of special interest for the subsequent communication-education intervention. Thus, this formative research produced, in eight weeks of field work, very useful information that is currently being used to design, implement, and evaluate the intervention.

### Appendix

#### Draft plan for the behavioural study and product test of the "pretty corner" and "tippy-tap"

##### Hypotheses

1. Installation of the pretty corner and tippy-tap will increase the frequency of handwashing by caretakers of children under three years of age, espe-

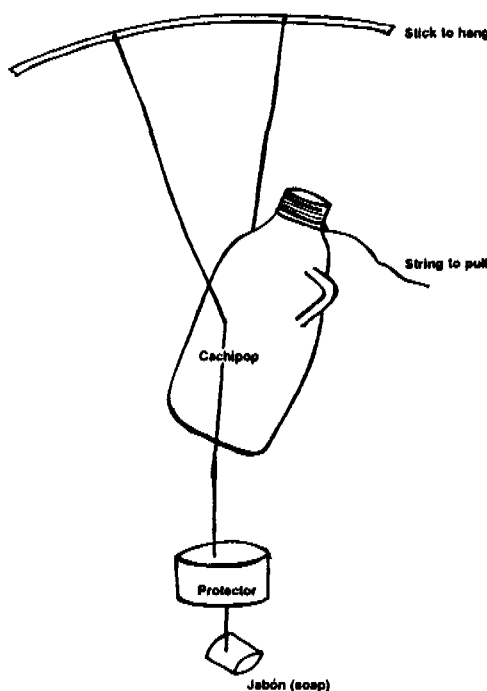


FIG. 1. Adaptation of the "tippy-tap" for the Santa María de Jesús project

cially before they prepare food and before they serve food to children.

2. Installation of the pretty corner and tippy-tap will increase correct hand washing by caretakers of children under three. "Correct" is defined as using "clean" water that is running and has not been used by other people, using soap, and drying the hands with a clean rag or towel.

#### *General objectives*

Observe the intervention with all of the key elements in place in its most ideal form at the home level. Key elements include the pretty corner, the tippy-tap, the father, and the child care-giver systematically involved in conducting key behaviours to support the mother.

#### *Specific objectives*

1. Observe the installation of the pretty corner and tippy-tap to identify barriers that must be adapted and strengths that can be reinforced in the final strategy.
2. Observe the systematic incorporation of the father and the child care-giver in the installation, use, and maintenance to identify barriers that must be adapted and strengths that can be reinforced in the final strategy.
3. Identify the media mix for the phase-2 communications strategy, including training, graphic materials to support the training, and graphic materials to identify and decorate the pretty corner that will visually stimulate correct hand-washing behaviours.
4. Test the product positioning, tone, logo, and other elements of the creative strategy with members of the target audience.

#### *Methodology*

1. The promoter observes the father, mother, and older child washing their hands, comparing their actual behaviour with the list of desired behaviours established in the communications plan and conducts a brief interview concerning hand-washing behaviours.

2. The promoter explains the goals of the programme and enabling knowledge concepts to the family.
3. The promoter and the family identify the child care-giver.
4. The promoter, father, and child care-giver, in coordination with the mother, install the pretty corner and tippy-tap.
5. The promoter teaches the father, mother, and child care-giver how to wash their hands correctly using the tippy-tap and emphasizes the importance of washing hands before preparing food and serving it to children under three years of age.
6. The promoter, in the presence of the parents, teaches the child care-giver how to maintain the pretty corner and requests that the father supervise this maintenance.
7. The promoter visits the family daily for the first week to observe and measure the use of the pretty corner and tippy-tap, reinforcing correct behaviour and correcting incorrect behaviour.
8. The promoter visits the family once a week for three weeks to observe and measure use of the pretty corner and tippy-tap and requests that the mother, father, and child care-giver wash their hands using the tippy-tap, without giving any positive or negative reinforcement.
9. At the end of the fourth week, the promoter observes family hand washing and maintenance of the pretty corner, conducts a final interview to evaluate suggestions for implementing this intervention at the community level, and includes the objectives listed above.

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