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DIARRHEA AND ORS IN BANGLADESH  
TOWARD AN ORS SOCIAL MARKETING STRATEGY

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### Toward an ORS Social Marketing Strategy

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#### EXECUTIVE SUMMARY

An anthropological study was carried out in order to gather information needed to plan an effective social marketing program for oral rehydration salts (ORS). A purposive sample of 240 men and women was selected from five (5) districts of Bangladesh. Twelve interviewers then conducted open-ended interviews during a five-week period between June - July, 1985. Findings and implications for social marketing are summarized here.

Bangladeshis may recognize as many as four or more different types of diarrhea -- including ordinary diarrhea, cholera or "vomiting diarrhea", "bloody dysentery", and greenish or mucousy diarrhea -- but distinctions based on symptom characteristics become obscure when it comes to management or treatment of illness. Causes attributed to diarrhea tend to relate to impure food or water; small percentages of respondents mentioned supernatural agents or causes such as hot weather. Home treatments for child diarrhea include potentially dangerous food restrictions, reliance on certain potentially rehydrating drinks and porridges, oral rehydration therapy in the form of ORS or home-made sugar-salt (labon-gur) solution, and to a lesser extent herbal remedies. 61% of respondents had used the homemade solution and 58% had used packeted ORS. (Due to the bias inherent in the purposive sampling procedure, a 42% figure recently provided by the NORP evaluation study should be regarded as more representative of Bangladesh as a whole). There was regional variation on ORS usage, with Chittagong district leading and Syhlet trailing. There is some evidence that ORS may be thought more appropriate for adults than for children.

Bangladeshis have relatively little confidence in their own ability to handle diarrheal illnesses at home with dietary and herbal remedies. They prefer to seek outside help if possible. For treatment of child diarrhea, 8% of respondents said they sought an allopathic practitioner (usually unqualified) or allopathic medicines; 36% sought a mystical or religious practitioner such as moulana and kobiraj; and 7% sought homeopathic

treatment. In addition, 14% mentioned receiving some form of oral rehydration therapy from practitioners and 7% mentioned receiving IV treatment. The daktar, an allopathic healer not formally qualified in medicine, seemed to be the most available as well as the preferred practitioner in cases of child diarrhea. From interviews with parents and with a limited number of daktars themselves, daktars are generally favorable toward ORS and a number have added ORS to the antidiarrheals and antibiotics they use to treat diarrhea.

Mystical/religious treatment of diarrhea consists of the practitioner blowing and praying over a child, preparing and administering "holy water", and preparing a special tablet (tabiz) bearing a Koranic inscription. Purgatives and allopathic drugs are not used. Kobirajs use ayurvedic and yunani medicines although they may also combine mystical/religious elements in treatment.

It is difficult to establish a consistent pattern of recourse to therapy in cases of child diarrhea. Some mothers first give their child herbal remedies, then try ORS or homemade ORT solution, then take the child to a daktar or a qualified physician and finally, if the condition persists, evil spirits or other mystical causes may be suspected and the child will be taken to a mystical/religious practitioner. Less often, mothers seek a mystical/religious practitioner before going to a doctor or unqualified allopath.

Although mothers spend more time with young children and play a greater direct role in the management of childhood illnesses, fathers have far greater decision-making authority. The fathers' parents share some of this authority. In sponse to a question about sources of information outside the family about diarrhea and its treatment, 60% of respondents mentioned radio (and occasionally TV); 37% mentioned extension workers; and 35% mentioned "doctors". The sole source of information about ORT broadcast on the radio seems to be the recent BRAC campaign to promote homemade sugar-salt solution.

Respondents associated weakness, immobility, and to a lesser extent sunken eyes and death with continuous, persistent diarrhea. When prominent dehydration symptoms were described to respondents, 68% reported having seen all of the symptoms and between a third and a half (depending on the particular question) associated the symptoms in some way with diarrhea. A majority (68%) knew of no way to prevent the symptoms described to them. Others mentioned treatments for the symptoms such as ORS, homemade ORT solution or glucose mixed in water (35%); or potentially-rehydrating drinks or porridges (8%). Even allowing that some answers may have been influenced by the interview context, there seems to be a basis to assume that a significant proportion of Bangladeshis see a connection between dehydration symptoms and diarrhea.

Ninety-two percent of respondents were familiar with packeted ORS and 86% saw it as a treatment for diarrhea. Only 16% thought ORS was for water loss. 77% of all respondents, which includes many who have used ORS, believe that ORS reduces or stops diarrhea within 1 - 4 days. It is also noteworthy that a majority (58%) of respondents expressed the view that diarrhea can cleanse the body of impurities or harmful elements, especially in the case of indigestion or measles.

Negative perceptions of ORS were sought by asking reasons not to use ORS, whether or not ORS is incompatible with existing beliefs or practices, what the local reputation of ORS is, whether or not influential local people oppose ORS, if ORS has any negative effects, the "hot/cold" perception of ORS, whether or not children refuse to swallow ORS, if ORS is considered a real medicine, and if users found it effective. Answers to these questions indicate that there are no significant cultural constraints to ORS use. The more important problems reported related to availability, cost, and children refusing to swallow ORS. A small minority of respondents said that ORS does little more than quench thirst, that ORS may be bad for a patient, or that an influential person advised against using ORS. Most regarded ORS positively, seeing it as a medicine which gradually stops diarrhea and has other beneficial effects such as strengthening or nourishing a child.

### **MARKETING IMPLICATIONS**

The findings have several implications for the social marketing of ORS. ORS can be promoted as a medicine that combats symptoms such as weakness, immobility, sunken eyes, weight loss, and thirst. These symptoms can further be related to water loss for diarrhea (consistent with the message of the BRAC sugar-salt solution campaign) and the existing belief that the symptoms signal danger can be reinforced. ORS can also be promoted as a medicine that can prevent the appearance of dehydration symptoms and that should be taken if diarrhea persists. Part of the ORS message ought to be that people can and should mix and administer ORS themselves and not simply rely on outside professional help. On the other hand, people should be advised to consult medical or paramedical help if diarrhea and/or dehydration symptoms persist.

ORS can also be marketed as a medicine which helps strengthen a child suffering from diarrhea.

The marketing question arising from the finding that most respondents including ORS users believe that ORS stops diarrhea -- albeit gradually over a period of days -- is more problematic. Although it would be easier to reinforce an existing belief than to challenge this and instead attempt to teach a largely uneducated peasantry about dehydration, the fact is that standard, glucose-based ORS does not cut down on stool output. If the Social Marketing Project were to switch to rice-based or trisodium citrate-added ORS in the future, the marketing message that ORS helps cut down on diarrhea could be considered.

The advice and services of daktars seem to be sought more often than that of other practitioners, therefore it is important that their influence be taken into account in the development of an ORS social marketing program. Daktars are already moderately familiar with, and well-disposed toward, ORS. The SMP should therefore train daktars in use of ORS and develop them as links in the marketing chain--just as SMP has done with family planning products. Teaching daktars about dehydration as well as the correct preparation and use of ORS could do much to educate the general public, since daktars are significant opinion leaders in health matters.

## 1.0 INTRODUCTION

In January, 1985 USAID/Bangladesh requested assistance from Primary Health Care Technology (PRITECH), a centrally-funded USAID project implemented by a consortium of private consulting firms in Washington, D.C., to assist in the planning of both an anthropological study and a marketing research study in order to develop an oral rehydration salts (ORS) social marketing plan. The program is to be implemented by the ongoing, USAID-funded Social Marketing Project (SMP) of Bangladesh. The SMP is administered by Population Services International (PSI).

In February, 1985 USAID/Bangladesh requested that the two studies planned in January be carried out as soon as possible. The anthropological study was to be an essentially qualitative study that would reveal knowledge, attitudes, and practices related to diarrhea and ORS. Approximately two months were allocated for the study. The PRITECH anthropologist was to be personally involved in all stages of research design, data gathering, and analysis. Assistance in fieldwork as well as in other aspects of the study was to be provided by a local research firm, Market Research Consultants of Bangladesh (MRCB).

The study was carried out as planned except that the starting date was delayed until May.

### 1.1 RELATIONSHIP TO OTHER STUDIES

USAID/Bangladesh and PRITECH were concerned that the anthropological study not duplicate the work of previous or ongoing research on diarrhea or ORS, but instead focus on topics relevant to the social marketing of ORS that were not well-researched. Of most relevance to the ORS social marketing program was the ongoing evaluation of the National Oral Rehydration Program (NORP) carried out by Mehta Currey and her associates at the International Center for Diarrheal Disease Research, Bangladesh (ICDDR,B). A draft report was due, and in fact was available, by July 1, 1985. Another ICDDR,B study headed by Najma Risvi included observation of the management of diarrhea cases over a period of many months in several Tangail district villages. It was not expected that data from this study would be analyzed in time for the development of the ORS social marketing plan.

Relevant previous studies in Bangladesh included one by Shahid et al (1983) that found among other things that some mothers were not using ORS for diarrhea accompanying measles in children because ORS was believed to stop diarrhea while in the case of measles, diarrhea was thought to purge the body of harmful wastes. Another study by Farrque et al (nd.) in northeast Bangladesh found that 71% of respondents attributed the cause of diarrhea to dirty water and smaller majorities cited food, worms, and dirty environment. 69% of this sample knew about ORT and 42% of this group believed ORS stops diarrhea. Only 3% thought ORT replaces lost fluids.

Herbal medicines and dietary remedies for diarrheal diseases were documented in a five-village study in Bangladesh by Ashram (1984). Improper food intake was the only specific cause attributed to diarrhea, although interviewers also mentioned the will of God, evil spirits, and evil eye as causative factors. No negative beliefs, attitudes, or practices relating to ORS were found in this study.

Other studies in Bangladesh have shed light on the variety of indigenous health practitioners available in Bangladesh, and on recourse to therapy during various illnesses including diarrheal diseases (Sarder and Chen, 1981; Assiz, 1977) and on the importance of diet in disease management (Risvi nd.).

Elsewhere on the subcontinent, Bentley (1985) combined quantitative methods with a year-long ethnographic study of household management of child diarrhea in three villages near Delhi. Findings from this study are referred to elsewhere in this report. In another north India study Kuman et al (1981) found that while most mothers recognized symptoms of dehydration, these were not associated with diarrhea. Likewise Lozoff et al (1975) in a south Indian study found that dehydration symptoms were called dosham and were seen as life-threatening, but were not associated with diarrhea by most. This study also described local classification of diarrheal diseases. "Continuous green" diarrhea, for example, was believed to be pollution-related and therefore required family and ritualistic treatment rather than cosmopolitan or biomedical medicine. A study in Goa, India (Sarinvasa and Afonso, 1983) found that only 5% of a sample of mothers of under-five children believed dehydration symptoms to be related to fluid loss in the body. The various Indian studies also described food restrictions during child diarrheas, home remedies such as herbal infusions and special drinks or porridges, and the importance of the "hot-cold" dichotomy in local perceptions of disease and in therapies.

Among the topics relevant to ORS social marketing not adequately researched in Bangladesh were indigenous perceptions of dehydration symptoms; local classification of, or differentiation between, diarrheal diseases, and local perceptions of ORS and its effects on children. The present study was designed in part to shed light in these areas.

## 2.0 METHODS

There are strengths, weaknesses, and advantage tradeoffs for each of the research methods commonly used to gather data for the development of social marketing programs, namely direct observation, focus group interviews, in-depth interviews, and surveys (Booth and O'Hara, 1984). Given the needs of the Social Marketing Project and the plan for a complementary marketing research study, it was decided that an anthropological study of diarrhea and ORS could combine aspects if not advantages of both survey and in-depth interviewing methods. Survey questions were therefore all designed as open-ended and probing techniques were developed to ensure greater depth in answers. National representativeness was approximated by selecting respondents in five widely-separated districts of Bangladesh. Purposive rather than random sampling was used in order to ensure an adequate number of interviewees who had experience with, and opinions about, ORS. Those selected were often parents of children under the age of five although older respondents were also selected. There was a slight bias in favor of the not-so-poor and not-so-remotely situated. 240 Bangladeshis, of which some 66% were women and 85% live in rural areas, were interviewed in five districts with a distribution as follows: 45 in Khulna, 47 in Syhlet, 53 in Chittagong, 48 in Tangail, and 47 in Rangpur.

Interviewers consisted of the anthropologist, a full-time male interviewer and sometimes interpreter for the anthropologist, and 10 part-time female interviewers who were already residing in the districts selected for interviewing. All local staff was recruited and trained by Market Research Consultants of Bangladesh (MRCB).

It should be noted that private, one-to-one interviews in the villages proved all but impossible. Kinsmen and neighbors gathered around the place of interview -- whether or not the foreign anthropologist was present -- and sometimes made comments influencing the interviewee. Of course their very presence exerted an influence. Some of the advantages of focus groups interviewing can be realized in such circumstances, i.e., feelings, values, and attitudes can emerge spontaneously and in a natural context. On the other hand, standard analysis of data based on respondent characteristics becomes invalid to the extent that responses are influenced by others. Since standard, statistical data analysis was not part of the study plan, the fact that interviews were non-private was not much of a problem.

Interviews took an average of 40 minutes to conduct. Answers were recorded verbatim and were subsequently grouped in inductively-derived categories for frequency tabulations. Interviews were conducted between May 29 - July 25, 1985.

### 3.0 TYPES OF DIARRHEA RECOGNIZED

Diarrhea is defined by Bangladeshis as the passing of loose, watery stools. There are several Bangla terms for diarrhea of which dasto may be the most commonly used general term. The English term diarrhea has also found its way into fairly common usage.

When asked to name or describe the types of diarrhea recognized, 74% of respondents mentioned general, plain, ordinary, or simple diarrhea; 63% mentioned diarrhea accompanied by continuous vomiting and weakness (5% of this group used the English term cholera for this type); 30% mentioned bloody diarrhea or bloody dysentery (amashaya in Bangla); and 28% mentioned greenish or yellowish diarrhea or diarrhea with mucous (sometimes called buniaga). Less frequently cited were diarrhea with weakness (but no mention of vomiting) (12%); stomachache (8%); diarrhea with fever (4%); diarrhea from worms (3%); and diarrhea associated with teething in young children (1%). When asked which types of diarrhea are dangerous, bloody dysentery was cited most frequently, followed by vomiting diarrhea or cholera. However, all types were cited with some regularity. Ordinary diarrhea was said to be dangerous if it continued for more than three to four days.

Very few respondents were able to attribute different causes or describe different treatments for various types of diarrhea recognized. Instead, respondents mentioned general causes and treatments for diarrhea. The most frequently attributed cause was bad, spoiled, or indigestible food (60%)<sup>1</sup>; followed by dirty or contaminated water (23%), heat or hot weather (7%); flies or exposed food (7%); worms (6%); evil spirits; evil eye; bad air; or God's will (4%); bad or spoiled breastmilk; or breastmilk unqualified (3%)<sup>2</sup>; and dirty hands or body (2%). 17% of respondents claimed they didn't know the cause of diarrhea.

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<sup>1</sup> Bad food was found to be second commonest cause (after hot weather) attributed to diarrhea in a study in Northern India (Bentley, 1985a, Table I).

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<sup>2</sup> Some Bangladeshis believe that nursing mothers with diarrhea can pass the illness along to their infants through breastmilk.

It should be kept in mind that respondents may feel constrained to mention mystical causes to better-educated strangers in the context of an impersonal interview and that villagers tend to tell interviewers what they think the interviewers want to hear. Only the unqualified allopaths were able to specify causes and treatment for different types of diarrhea. They seemed to have a rough idea about the role of broad classes of microorganisms involved in diarrheal disease.

In a related and subsequent question respondents were asked if food or drink contributed to diarrhea. 90% said yes and 10% didn't know. Among the former, stale, spoiled, or exposed food was mentioned by 40%; impure water by 34%; hard or hard-to-digest food by 22%; overeating by 13%; jackfruit; mangos and certain other fruits by 13%; meat and fish by 7%; and miscellaneous other answers (including breastmilk) by 5%.

Regarding treatment, "doctors treatment" (usually from unqualified allopaths) was the most commonly mentioned recourse, cited by 53%. This was followed by ORS or homemade sugar-salt solution (48%); homeopathic medicines (14%); herbal treatments (10%); mystical or religious treatments (7%) and home remedies such as green coconut water and porridges 4%. Only 5% claimed they did not know how to treat diarrhea.

Answers to a single, direct question on diarrhea treatment can be misleading. For example, Bangladeshis tend not to think of the various gruels, porridges, and special beverages given during diarrhea as treatments per se, therefore information on such home remedies -- many of which have rehydrating effects -- may be underreported. In the present survey, a good deal of information on home remedies emerged when questions were asked about appropriate diet during diarrhea episodes. This information is presented below in Section 3.3.

Respondents were asked if they knew of any ways to prevent various types of diarrhea. Again, respondents preferred to answer about diarrhea in general and not about different types of diarrhea. If interviewers probed an answer such as "one should avoid bad foods" with the question, "what about bloody dysentery?" the respondent would typically then say he or she didn't know.

Regarding prevention, 42% of respondents said they knew of none for diarrhea; 31% said personal cleanliness and hygiene and avoiding contact with people who have diarrhea; 25% said avoiding bad, spoiled, or cold foods; 24% said avoiding contaminated or unprotected water; 7% said avoiding food exposed to flies; 5% said taking "doctors' medicines"; 4% said maintaining clean surroundings; and 3% or seven respondents said taking ORS or sugar-salt solution.

A few of the "don't knows" made comments like, "only God can save one from diarrhea." And some of those who mentioned avoiding bad food made comments like a woman in Khulna who said, "We know what foods to avoid but we are poor and so we can't be choosy in what we eat".

### 3.1 GENERAL PERCEPTION OF DIARRHEA

As we saw in the preceding section, at least four separate types of diarrhea can be distinguished by Bangladeshis, yet functionally (i.e. in terms of perceived etiology, treatments, and preventions) the various diarrheas tend to be regarded as one general syndrome. The different types recognized may only be important in indicating the severity or danger of the diarrhea -- and this is significant for ORS marketers and health educators (see below).

A study by Shahid et al (1983) in Bangladesh suggested that at least one type of diarrhea, that associated with measles in children<sup>3</sup>, was thought to purge harmful wastes from the body. Since it is important to know if people regard diarrhea as having a positive junction we asked a general question, "can diarrhea ever cleanse the body or rid it of impurities?" 58% said yes, 24% didn't know, and 18% said no. Several of the "yes" respondents identified the impurities that are purged as the body cannot digest, as well as "bad blood" or poisons. There were also a few comments like, "unfortunately good elements are washed out of the body along with bad elements".

We then asked if diarrhea was ever good for the body. 42% said no and 16% didn't know. The remaining 42% thought that diarrhea might usefully purge bad elements from the body in cases of indigestion or gas, upset stomach, constipation, measles, or teething in young children. Upon probing these answers, it seems that Bangladeshis feel it is better not to have diarrhea in the first place, but if one has certain types of illness diarrhea may serve to usefully flush bad elements from the body. The significance of this for social marketing is that for at least certain types of illnesses, Bangladeshis may not always want to stop diarrhea, at least immediately.

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<sup>3</sup> We found in the present study that measles is not ordinarily thought of as a diarrheal disease, even though the associated symptom of diarrhea is recognized.

In this connection it is significant that Bangladeshis seem not to use purgatives, as is common practice in other parts of the world where diarrhea is thought to flush impurities from the body (e.g. Green, 1985). This was determined by discussing purgatives with respondents who were indigenous practitioners.

### 3.2 UNDERSTANDING OF DEHYDRATION

Although numerous studies relating to diarrheal disease in Bangladesh exist, the question of indigenous perceptions of dehydration remained largely unexplored at the time of developing the questionnaire for the present study. In order to avoid influencing the answer, we asked "what complications or symptoms do you see if diarrhea continues?" in the context of child diarrhea. 75% said weakness, immobility, and/or fatigue<sup>4</sup>; 35% said the patient might die; 20% said fever or body heat; 17% said sunken eyes; 17% said weight loss; 15% said loss of appetite or decreased digestive ability; 11% said cold or clenched hands or feet; 6% said thirst or water loss; 4% said stomach pain; 3% said loose skin; and there were several infrequently cited answers such as weak pulse and dry skin. Only one of 240 respondents mentioned sunken fontanelles.

Respondents were then asked if they had even seen the prominent symptoms associated with dehydration -- associated that is, by the medically trained -- although this and other questions referring to dehydration were devoid of terms that denote or connote dehydration. Instead, symptoms such as depressed fontanelles, sunken eyes, and loose, dry skin were described to the respondent. 34% claimed they had seen all the symptoms; 34% had seen some of the symptoms; and 32% had not seen them or did not know. As with the answers to the previous question, sunken fontanelles seemed to be the least recognized symptom.

Next, respondents were asked the cause of the symptoms just described to them, as well as if the symptoms can be treated (cured) or prevented. Regarding cause, 33% didn't know; 33% thought the symptoms were caused by or related to diarrhea, cholera, or dysentary; 6% said bad water; 6% said worms; 6% said bad food; 6% said the symptoms

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<sup>4</sup> Weakness was found to be the outstanding symptom associated with persistent diarrhea in a local study in northern India (Bentley, 1985b).

were evidence of evil spirits or evil air; 5% said the symptoms mean the child or older patient is getting worse and might even die, and there were miscellaneous answers such as heat or fever. Only 2% said the symptoms were due to water loss.

Regarding treatment of dehydration symptoms, 44% of respondents said only a "doctor" knows. Perhaps surprisingly, 35% said ORS, homemade sugar-salt solution, or glucose mixed in water is the treatment for dehydration symptoms. Another 8% mentioned gruels, coconut water, or plain water as treatments; and 8% said treatment by mystical or religious practitioners was needed. Regarding prevention of dehydration symptoms, a clear majority (68%) didn't know or couldn't say; 8% said they would take a doctor's advice; 6% said use ORS or intravenous (IV) saline solution; and the remainder repeated the preventive measures mentioned for diarrhea such as maintaining personal hygiene and avoiding contaminated water.

After respondents were offered opportunities to spontaneously make connections between dehydration symptoms and diarrhea, they were asked if the symptoms described earlier were related to diarrhea or to something else entirely. Interviewers were carefully instructed to refer only to the previously described symptoms and not to diarrhea, water loss, or anything else. 58% of respondents said the symptoms were caused by, or somehow related to, diarrhea; 28% said the symptoms were unrelated to diarrhea; and 14% didn't know.

Finally, respondents were asked if any Bangla term describes the symptoms under discussion. Although researchers working in other parts of the subcontinent have found local terms to describe dehydration symptoms (e.g., Lozoff et al, 1975 for Tamil speakers), evidence was strong even before the present study that no such term was in use among Bangla speakers. Nevertheless, it was felt that answers to such a question might provide insights into indigenous perceptions of dehydration. 48% said there was no term or they knew of none; 34% answered with various Bangla (and occasionally English terms) for diarrhea, dysentery, or cholera; 12% said kosha or constipation; and 6% said kamela rog which means jaundice or hepatitis.

Since indigenous perceptions of dehydration are of key importance in the social marketing of ORS, the significance of findings in this area should be summarized. First, the weakness, immobility, and death cited by most respondents as symptoms or consequences of persistent diarrhea do not relate only to dehydration. Only a minority of respondents mentioned relatively unambiguous dehydration symptoms such as sunken eyes. On the other hand, some 68% of respondents claim they had seen all or some of the outstanding symptoms associated with dehydration that were described to them and

about half the respondents associated the symptoms in some way with diarrhea or with causes of diarrhea. Even allowing that some proportion of answers may have been influenced by the context of the interview, there seems to be a basis for social marketers and health educators to assume that a significant proportion of Bangladeshis see a connection between dehydration symptoms and diarrhea.

The finding that 35% of respondents believe ORS or sugar-salt solution to be appropriate treatment for dehydration symptoms was probably also influenced by the survey context, and possibly by the phrasing of the question by some interviewers, but the finding probably also reflects knowledge gained from the recent BRAC campaign to promote homemade sugar-salt solution.

In sum, a social marketing campaign can promote ORS as a medicine that combats symptoms such as weakness, immobility, sunken eyes, weight loss, and thirst in a child with diarrhea. These symptoms can further be related to water loss from diarrhea (consistent with the message of the BRAC sugar-salt solution campaign) and the existing belief that the symptoms signal danger can be reinforced. ORS can also be promoted as a medicine that can prevent the appearance of dehydration symptoms and that should be taken if diarrhea persists. The belief expressed by 44% of respondents that doctors know best about treating dehydration symptoms can be challenged to the extent that Bangladeshis, especially in rural areas, come to believe that they can and should mix and administer ORS themselves and not simply rely on outside professional help (this point is discussed further below). On the other hand, people should be advised to consult medical or paramedical help -- or the closest to this available -- if diarrhea and/or dehydration symptoms persist.

### **3.3 DIARRHEA MANAGEMENT**

Based on impressions gained during interviewing as well as on responses to certain questions, Bangladeshis appear to lack self-confidence in health matters. One senses a feeling of helplessness, perhaps even of fatalistic resignation, when illness occurs. Bangladeshis, especially the rural poor, would rather have someone tell them what to do than to make decisions themselves and then take responsibility for treating illness. This should not be surprising since poverty and lack of education do not inspire self-confidence generally, and especially in an area such as health care where medical professionalism and mystique can be intimidating.

This feeling of helplessness is reflected to some degree in home treatments for child diarrhea. 42% of respondents claim they do nothing. Among the 140 respondents who do something, 53% claim they use homemade sugar-salt solution or packeted ORS; 24% use gruels, porridges, or coconut water; 21% use herbal remedies such as the leaves of pineapple, spinach, or cucumber; and the remainder rely on diet therapy (see below) or on mystical/religious treatment by practitioners who visit the home. As presented in Section 3.4, 58% of all respondents claimed they had tried ORS at least once. Even allowing for a little exaggeration on the part of respondents, and allowing for respondents forgetting to mention ORS in response to a general question about diarrhea treatment, 58% is a significantly higher figure than the 31% of all respondents who mentioned using ORS specifically for child diarrhea. This discrepancy could mean that there is a percentage of discontinuers, or people who have tried ORS once but then not continued. This may account for about 10%, since 48% of respondents mentioned ORS or homemade solution in response to a general question about diarrhea treatment (Table 3, Annex A). In fact, this is consistent with our finding presented in Section 3.4 that 11% of ORS users found results of ORS to range between fair and poor. The 58% - 31% discrepancy could also mean that ORS is less commonly used for children than for adults. There were two comments by respondents during the course of interviewing that suggest some parents may believe that ORS is not appropriate for small children. More research in this area is needed.

When asked about child diarrhea treatments outside the home or involving outside help, 80% of respondents said they sought allopathic practitioners (usually unqualified) or medicines; 36% said they consult mystical/religious practitioners; 14% said they receive some form of ORT from practitioners; 7% said they sought homeopathic treatment; and 5% said they receive IV treatment from practitioners.

It was difficult to establish a consistent pattern in recourse to therapy. It should be noted that mothers have most of the responsibility for management of their children's illness, although Islamic pardah (female seclusion) means that men tend to be the ones who travel away from home to buy medicines (including ORS) and initially consult practitioners. In any case, women tend to know more than men about home remedies and appropriate diet during illness and some women respondents described patterns in their own management of child diarrhea.

Virtually all women restrict certain foods and emphasize others--known collectively as pathya--thought to be appropriate for illnesses like diarrhea. Some give their child herbal remedies, then try ORS, then take the child to an unqualified allopath (daktar) and finally, if the condition persists, the mother or another person of influence

might decide that evil spirits or other mystical causes are involved, and the child will be taken to a mystical/religious practitioner. A practitioner such as a moulana, kobiraj, fakir, ojha, or mulla then gives "holy water" and prays over the child, perhaps blowing on the child and perhaps preparing a special tablet (tabiz) containing a Koranic inscription to be worn by the child. Other women, but perhaps a minority, seek a mystical/religious practitioner before going to a doctor or unqualified allopath. Some mystical practitioners, notably the kobiraj, may give aryuvedic or yunani herbal medicines.

It is not clear from the present survey how long ORS is administered in the home if diarrhea persist; further research is needed to clarify this and in fact should be clarified by SMP's ORS marketing research study.

Rather striking differences in reliance on home treatments were found by region. For example 83% of Chittagong respondents claimed they used no home treatments (but see Section 4.0 on ORS usage by district). At the other extreme, only 2% of Rangpur respondents made such a claim. However, reliance on "doctors"--usually unqualified--was consistent throughout the five districts surveyed.

Since diet proscriptions and prescriptions are determining factors in diarrhea and can influence the apparent effects of ORS, we asked which foods are restricted when a child has diarrhea. 75% of respondents claimed that all or most solid foods are restricted during diarrhea, although this may not reflect actual behavior;<sup>5</sup> 11% said they withhold rice, grains, pulses, bread, and other non-meat staples (especially if spiced); 10% said they withhold spoiled or exposed food; 5% mentioned fruits believed to cause or exacerbate diarrhea such as jackfruit or mango; and miscellaneous answers referred to vegetables, milk, unsafe water, and spicy foods. In response to a separate question about breastfeeding, 68% claimed that breastfeeding continues during infant diarrhea; 8% said it is discontinued, and 14% (mostly men) did not know<sup>6</sup>.

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<sup>5</sup> Anthropologists in Bangladesh (Risvi, 1985) and northern India (Bentley, 1985b) who have directly observed management of diarrhea cases over periods of months have found that foods and fluids, including breastmilk, are not withheld from children with diarrhea to the extent usually reported to interviewers.

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<sup>6</sup> Direct observation in Tangail district also indicates that most mothers continue breastfeeding their children when the latter have diarrhea. However, breastfeeding may be discontinued when the mother has diarrhea since the illness is believed by many to be transmissible (Risvi, 1985).

Suspecting that the use of potentially rehydrating gruels, drinks, and porridges might be underreported in response to a question on treatments, we asked what foods are given during diarrhea. There was considerable variation in the answers by district, depending on the presence of certain crops. Overall, however, 27% said barley water (thin barley soup); 21% said a sago-based drink; 18% said glucose water, sugar water, sugar-salt solution, or ORS (ORS use underreported here because ORS not usually thought of as a food); 3% said lemon water or juice; and 16% mentioned such foods as wheat porridge, soft rice, breastmilk, and corriander gruel.

It is noteworthy that sugar and salt is added to flavor most drinks, gruels, and porridges mentioned here, thereby improving their potential for rehydration. The World Health Organization, recognizing the value of such traditional remedies, has recommended the promotion and encouragement of such home remedies in public health programs. The Social Marketing Project should also encourage the continued and increased use of such pathya (appropriate foods for illness) giving regional emphasis to foods commonly used in each region. At the same time, the practice of discontinuing solid, staple foods should be discouraged. Where food restrictions are severe, a child may die of malnutrition even while being given ORS.

We asked when normal diet is resumed after diarrhea symptoms stop. Of those 180 able to give an answer, 49% said in less than 2 days; 32% said between 2-3 days; 7% said between 4-5 days, and the remaining 12% gave answers ranging between 6 days and over 2 weeks. The later the resumption of normal diet, of course, the greater likelihood there is for malnutrition and related problems.

To shed further light on decision-making in the management of diarrhea, we asked "Who in the family and/or immediate community can advise on the treatment of your child's diarrhea?" Male respondents often replied that they make their own decisions (23% of all respondents) and females often mentioned their husbands' advice or decision-making first (37%). Also cited are parents or parents-in-law (25%); neighbors, friends, or elders (18%); "doctors" (15%); other family members (8%); indigenous health practitioners (4%); and local leaders (1%). Three people commented that they would take advice from anyone who gave it. A number of ~~women~~ mentioned that they would never make a decision on their own without guidance from their husbands and perhaps their husband's parents as well.

We next asked about other sources of information about diarrhea and its treatment. 60% mention radio (and occasionally television); 37% mentioned extension workers; 35% mentioned "doctors"; 7% mentioned friends and neighbors; 6% said they had no sources and therefore knew nothing about diarrhea; 3% (notably Daktars and the better-educated) mentioned print media; and 1% mentioned schools or school children. Since many of the radio citations came in response to a probe in which radio was mentioned, 60% is probably an inflated figure. However, the BRAC radio campaign promoting homemade ORT has reached people all over Bangladesh and it was clear from questioning that BRAC was the primary and perhaps even the sole source of respondents' radio-derived information on ORT. In fact, there is little competition on the airwaves; there has apparently been no promotion or advertising of packeted ORS on Bangladesh radio.

Respondents were usually unable to tell where extension workers come from but many or most were said to be female. Again, this may refer to BRAC ORT motivators, but occasionally an organization like CARE was mentioned by name and a number of women visitors were referred to as family planning workers. This can be taken as evidence that ORT/ORS and family planning programs can be integrated. In fact, improving the health and survival of children by ORS use should make parents more receptive to the idea of having fewer children.

Ideally, a social marketing program makes use of all available channels of communication, each channel being developed to communicate that what it is best at communicating. However, in practice in developing countries with serious manpower and transportation constraints, radio often becomes the most important medium for communication. Although some respondents in the present survey noted that radio was their only source of information about treating diarrhea, there were other comments like, "I listen to the radio but I don't believe what they say."

Before concluding the section on diarrhea management, further mention of indigenous health practitioners should be made. Among the non-biomedically trained practitioners relied upon for various illnesses including diarrhea are:

1. Daktars (from the English "doctor"), or allopaths who are not formally trained in medicine. They are essentially self-trained, or they learn through apprenticeship with another doctor. Some have undergone skill-upgrading in government sponsored or approved short courses. From interviews with and about daktars in the present survey, they appear to treat various diarrheas with ORS, IV saline solution, antidiarrheals, antibiotics, and sometimes analgesics, depending on their diagnosis and perhaps on other factors;

2. Homeopaths, to whom 14% of the present sample turn in cases of diarrhea. Some homeopaths may advise patients to forego all other medicines while taking homeopathic medicine for diarrhea, but on the whole they seem not to be opposed to ORS;
3. Religious faith healers including ascetics (fakirs), priests (moulanas) and those thought to possess spiritual healing powers gained through dreams, meditation, study, or spirit possession. Faith healers prepare and administer "holy water" in cases of diarrhea. They also pray and blow over the patient as well as prepare the tablets (tabiz) described earlier; and
4. Kobirajs and totkas, or herbalists whose knowledge derives from both the ayurvedic and yunani traditions and who may combine shamanistic elements in their treatments. A shamanistic healer known as ojha and who seems to be best known for treating snakebite, is also consulted for some diarrheas, according to the present survey.

The advice and services of daktars seem to be sought more often than that of other practitioners, therefore it is important that their influence be taken into account in the development of an ORS social marketing program. Daktars are already moderately familiar with, and well-disposed toward, ORS. The SMP should therefore train daktars in use of ORS and develop them as links in the marketing chain--just as SMP has done with family planning products. Teaching daktars about dehydration as well as the correct preparation and use of ORS could do much to educate the general public, since daktars are significant opinion leaders in health matters.

### 3.4 ORS KNOWLEDGE, ATTITUDES, AND USE

A variety of questions were asked about ORS and oral rehydration therapy (ORT). First we asked if respondents knew what ORS is. 92% claimed they knew. This parallels the finding of the ICDDR,B evaluation of the National Oral Rehydration Program (hereafter, NORP study) which found that 88% of respondents from a randomly-derived national sample of 2,500 knew something about or were aware of ORS (Currey 1985).

We next asked what ORS is used for. 86% said ORS cures or helps treat diarrhea, dysentery, or cholera; 16% said it overcomes or prevents water loss in a body; 4% said it keeps the stomach or body "cool" or it overcomes upset stomach; 2% said it prevents diarrhea; and 2% said it quenches thirst in a person with diarrhea.

Some of the 16% that seemed aware of dehydration mentioned symptoms such as weakness and sunken eyes. The significance of the widely-held belief that ORS cures diarrhea is discussed at the end of this section.

Respondents were then asked if ORS is a better treatment for diarrhea or for the symptoms of dehydration described to them earlier in the interview. Of the 131 who answered this (most of the rest simply said ORS was a good treatment) 73% said ORS is better for diarrhea and 27% said it is better for dehydration symptoms. Two women commented that ORS was better for older people whereas herbal remedies were better for children.

Respondents were asked if they or anyone in their immediate family have ever used the labon-gur (sugar-salt) ORT solution promoted by BRAC. 59% said yes and 42% said no. 127 of the 146 who had tried the ORT solution commented on their satisfaction. Of these, 92% said results were good or satisfactory in treating diarrhea; the remaining 8% were dissatisfied.

We then asked about experience with packeted ORS. 58% of respondents had used ORS at least once. In the 1985 NORP study, 40% of respondents who had experienced a case of diarrhea in the family within two weeks of the interview (some 450 respondents) claimed they had used ORS. And of the entire NORP sample of approximately 2,500 respondents, 42% was found to have used ORS at least once (Currey, 1985). Thus our finding, based on a purposive sample biased somewhat in favor of the not-so-old, not-so-poor and not-so-remotely situated, is about what would be expected.

Of the 144 from the present sample who had used ORS, 94% reported they used it for diarrhea, dysentary, or cholera; 4% used it for water loss; and 1% could not say why they -- or their wives -- used ORS. Results were reported as good or satisfactory by 84% of respondents; poor or not good by 6%; fair by 5%, and 4% said ORS seems to only quench thirst. In another question, respondents were asked if ORS stops or reduces diarrhea. 10% of all respondents said no; 10% had no opinion; and 3% said ORS does not stop diarrhea but it has other beneficial effects. Of the 77% who thought ORS does stop or reduce diarrhea, 38% said diarrhea is stopped within 1 - 2 days; 19% said within one day; 15% said within 3 - 4 days; 3% said within 5 - 6 days; 2% said within one week; and 18% could not say (perhaps because they had not used ORS) but they nevertheless believed ORS stops or reduces diarrhea.

It is perhaps surprising that such a high percentage of respondents, including many who have tried ORS, believe that ORS stops diarrhea. While there is evidence that rice-based ORS such as that used by ICDDR,B actually reduces stool output (Molla et al nd.), and there is some evidence that the same may be true for ORS with trisodium citrate, there is no scientific evidence that the standard, WHO-approved ORS formula used in most of Bangladesh has the effect of reducing stool output. It seems likely that since many diarrheas are self-limiting, ORS users believe that ORS contributes to the cessation of diarrhea. And it is to be expected that in the absence of clear understanding about dehydration, people would assume that a medicine to be used during diarrhea would do something for the diarrhea itself.

However, it is also surprising that those who have used ORS for diarrheas requiring antibiotic or antiparasitic treatment did not express disillusionment with ORS. Some proportion of this group may have received appropriate drugs from daktars and then attributed relief from symptoms at least in part to ORS taken, but there must still be a fairly sizable group for whom taking ORS did not stop diarrhea.

In response to a question on the local source for obtaining ORS, 31% of respondents said local "doctors;" 26% said they bought ORS at bazaars or markets; 25% said pharmacies; and 18% said health centers or hospitals.

We next tried to uncover any negative perceptions of ORS. Aware of what has been called the "Asian courtesy response," namely villagers giving what they think are polite, positive responses to interviewers, we asked a variety of questions about possible negative perceptions of ORS, then probed answers when appropriate. The first was, "Are there any reasons not to use ORS?" 83% said no; 13% didn't know or say; 2% said their children refuse to swallow ORS; 2% said that their "doctor" must prescribe ORS before using it (in only one case was an unqualified doctor described as opposing ORS); 2% said there are occasions when ORS should not be used (three respondents specified "when the patient has fever" and the other couldn't or wouldn't elaborate); and 2% said they don't like or understand ORS or they simply prefer other medicines. Only one person mentioned the expense of ORS.

Illustrating the pitfalls of expecting anything approaching complete and valid data from a single, direct question, a subsequent question on the convenience of obtaining ORS produced 23 respondents who volunteered that locally-available ORS was expensive for them. Followup on these responses revealed that in some districts, notably in remoter areas of Chittagong, an ORS packet which sells for TK2.50 in cities can sell for between TK5.00-9.00. Thus, ORS can be a substantial expense for poor families which have

several children susceptible to diarrhea and which must use several packets of ORS for each episode of diarrhea. A few respondents commented bitterly that pharmacists and local "doctors" exploit the poor by raising prices of medicines like ORS. Others remarked with equal bitterness that although they had heard that ORS was supposed to be distributed free of charge from hospitals and local health centers, poor people had little chance of service let alone free products at such facilities.

Following up on the indication that babies may refuse to swallow ORS, we asked about this in a separate question. Of the 136 or 57% who provided an answer, 74% said babies in their family refuse or don't like ORS (36% of this group volunteered the comment that they nevertheless force-feed babies who refuse ORS); and 26% said babies accept ORS. It would seem from this evidence that taste might be a constraint to ORS use. Little is known about whether Bangladeshi mothers use effective and appropriate force-feeding techniques for ORS; research in this area is needed. The Social Marketing Project should consider training unqualified allopaths and other paramedicals in force-feeding techniques.

We next asked if ORS has any bad effects. 80% of respondents said no; 14% didn't know; and 6% (n=14) said yes or possibly. One of the "yesses" said that intake of a watery remedy serves to increase the diarrhea; another said ORS "creates problems in the stomach; another complained of taste, and others could not be specific although negative effects were sometimes mentioned in response to other questions.

Following this we asked, "Is ORS incompatible with any foods, medicines, or conditions associated with diarrhea?" 53% said no; 21% said they didn't know; 18% said ORS should only be given with foods appropriate for diarrhea such as barley water; 17% further commented that regular diet should be restricted while taking ORS; 5% said that ORS is incompatible with certain porridges (such as the rice-based chira) or other home remedies for diarrhea; 2% said other medicines should be restricted while giving ORS; and one person said yes but couldn't be specific. In spite of some opinion to the contrary, most respondents saw no incompatibilities between ORS and traditional diarrhea remedies or foods, and many commented that ORS goes particularly well with porridges like chira or with drinks such as coconut water or lemon water.

Bangladeshis like other tradition-bound peoples of the subcontinent and elsewhere think of foods, medicines, and states of body as being either "hot" or "cool." Since a hot (gorum) illness like diarrhea requires a cool (tanda) antidote, whether in medicine or food, we were interested in discovering how ORS is perceived in this regard. 67% of

respondents believed ORS to be cool, 29% didn't know, and only 3% thought ORS to be hot. A few of the comments from the latter 3% (n=8) belie the apparent significance of the answer. For example, one respondent observed that ORS warms the body but cools the stomach. Another said ORS overcomes the cold hands and feet associated with persistent diarrhea. Thus we can conclude there are no problems with ORS in terms of hot/cold perceptions.

We also felt it important to know whether or not ORS is considered a real medicine, one regarded as equivalent to, e.g., IV solution or anti-diarrheal or other pills. Most (71%) said ORS is as good as or better than pills for diarrhea, although perhaps not as effective as IV solution; 22% didn't know; and only 7% thought ORS inferior to other medicines. Two respondents thought that IV solution is better because it costs more than ORS, and one said that ORS works slower than IVs<sup>7</sup>.

Next we tried to determine what sort of reputation ORS has locally. 66% said ORS has a good or okay reputation; 33% said they didn't know; and only 1% said ORS has a poor reputation. We further asked if there were any bad or negative rumors about ORS or any opposition to ORS on the part of indigenous practitioners or other local leaders. Of the 220 who answered the first question, 99% said no; and of the 230 who answered the second question, 99% again said no. The following negative comments were recorded:

- (1) "I heard a rumor that a patient died from taking ORS;"
- (2) "Our kobiraj (herbalist) doesn't allow ORS unless the condition is serious;"
- (3) "Our daktar discourages using packeted ORS;"
- (4) "There is a rumor that ORS is not good but our daktar or kobiraj have never advised against it."

Finally we asked what other effects ORS has on a child with diarrhea, and specifically whether or not ORS strengthens or nourishes a child. 49% of respondents said ORS strengthens or energizes a child; 34% said it nourishes; 5% said it helps

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<sup>7</sup> IV's are well-known in Bangladesh and IV kits can be purchased without prescription at pharmacies.

digestion; 2% said it quenches thirst, and 12% couldn't answer. 13% of the total said ORS doesn't strengthen and 5% said it doesn't nourish. There were also miscellaneous positive comments that ORS "normalizes the stomach," "normalizes excretion," "controls the stomach," and "improves health."

Summarizing ORS knowledge, attitudes, and usage, it can be concluded from the findings that there are no significant cultural constraints to ORS use: ORS is not seen as incompatible with existing remedies or diets for diarrhea and there appears to be no substantial opposition to ORS from indigenous practitioners, religious leaders or local political leaders. 58% of our sample had used ORS as least once (although the 42% finding of the NORP study is more representative of Bangladesh as a whole) and users seem to be relatively happy with the product. The more important problems reported related to availability, cost, and small children refusing to swallow ORS. A social marketing program can help ameliorate the first two problems and as suggested above, part of the program can involve the training of daktars in ORS force-feeding techniques.

A small minority of respondents believed that ORS does little more than quench thirst; or that giving ORS to a child actually increases diarrhea (which may be true); or that ORS is incompatible with existing diarrhea remedies; or that a local opinion leader opposes the use of ORS or that ORS is bad or harmful. Most respondents seem to regard ORS as a medicine which gradually stops diarrhea and has other beneficial effects such as strengthening or nourishing a child.

In addition to the marketing opportunities related to dehydration discussed in Section 3.2., this study suggests that ORS can be marketed as a medicine which helps strengthen a child suffering from diarrhea<sup>8</sup>. The marketing question arising from the finding that most respondents including ORS users believe that ORS stops diarrhea--albiet gradually over a period of days--is more problematic. Although it would be far easier to reinforce an existing belief than to challenge this and instead attempt to teach a largely uneducated peasantry about dehydration, the fact is that standard, glucose-based ORS does not cut down on stool output. If the Social Marketing Project were to switch to rice-based or trisodium citrate-added ORS in the future, the marketing message that ORS helps cut down on diarrhea could be considered.

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<sup>8</sup> This conclusion was also reached by Shahid et al (1983:154), based on their research in northeast Bangladesh.

#### 4.0 ANALYSIS

This research effort was not designed as a quantitative study amenable to statistical analysis. However, relationships between certain variables did seem to emerge. Respondents who were more educated and less remotely situated in the hinterlands tended to know more about ORS. Regional variation in ORS usage was also noted: Chittagong district led with 85% usage, followed by Rangpur (57%), Tangail (50%), Khulna (49%), and Sylhet (45%). Without Chittagong, which in fact had slightly more respondents than any of the other districts sampled, overall usage would drop from 58% to 50%. It is not known why Chittagong has a significantly higher percentage of people that have tried ORS than other parts of Bangladesh surveyed.

Tangail district on the other hand had the highest percentage (92%) respondents who had tried homemade ORT at least once. This was possibly due to the influence of CARE, since extension workers from this organization were mentioned by a number of Tangail respondents as being active locally.

Chittagong respondents were also likeliest to express the opinion that ORS is as good or better a treatment for diarrhea as pills (85% of respondents), followed by Rangpur (70%), Tangail (65%), Sylhet (49%), and Khulna (44%). It would seem from this and from the regional variations in ORS usage that special ORS marketing, including supportive health education is needed in Sylhet and Kulna districts.

There did not appear to be significant differences in ORS usage by age or sex (see Tables 12 and 13, Annex A), probably because use within the immediate family rather than individual use was asked about. However, there was a slight tendency for those reporting use to be younger although this may be because respondents under the age of 35 are likelier to have children and children tend to be especially susceptible to diarrhea.

Literacy, on the other hand, seems to be positively related to ORS use, or more accurately to having tried ORS at least once (Table 14, Annex A).

We also sought possible associations between use or nonuse of ORS and (1) the belief that ORS has negative effects; (2) the belief that ORS stops or reduces diarrhea; (3) the belief that ORS either strengthens or nourishes a child with diarrhea; (4) the belief that diarrhea rids the body of impurities. The associations, if any, seemed insigni-

ficant except that there was a slightly greater tendency for ORS users,<sup>9</sup> rather than nonusers, to believe that ORS either strengthens or nourishes a child suffering from diarrhea. There was also a slightly greater tendency for ORS nonusers, compared to users, to believe that diarrhea rids the body of impurities.

The first of these slight associations is to be expected: behavior tends to follow belief; in this case ORS use follows from a belief that ORS has positive benefits. The second association might also be expected: if one believes diarrhea can rid the body of harmful elements, and if ORS is believed to stop or reduce diarrhea (as 77% believe), then one may be hesitant to use ORS because it would inhibit the purging of harmful elements. However, the association is so slight that this belief -- which has objective merit -- seems not to inhibit ORS use significantly. In fact this belief can be viewed as compatible with the fact -- recognized by most respondents -- that diarrhea continues for several days even after taking ORS. To go a bit further, it may be that Bangladeshis are willing to take a product perceived as a diarrhea remedy, even though diarrhea will continue for some time after taking the product. Perhaps this helps explain why ORS usage is as high as 42% (Currey, 1985) in a country where ORS has never been promoted over the potentially most effective mass medium, the radio.

Finally, although sex of respondents did not relate significantly to ORS use, women seemed to know more about dehydration symptoms -- or to at least recognize them -- than men. Women also knew more about home remedies and were likelier than men to talk about consulting mystical or religious practitioners. Men, on the other hand, emerged as more self-reliant in decision-making including choice of therapies for diarrhea. An ORS social marketing program aimed at child diarrhea must therefore target or address both mothers and fathers, but in somewhat different ways. Men need to be persuaded to make the decision to use ORS and then to actually buy or otherwise obtain ORS. Women are more familiar with the child's illness and are more directly involved in home-based therapies including the preparation and administration of ORS.

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<sup>9</sup> "Users" is a shorthand way of referring to respondents who reported ORS use in their immediate family.

## BIBLIOGRAPHY

Ashraf, A., "Home Remedies and Rural Health Care," Dhaka: Christian Commission for Development in Bangladesh, Nov., 1984.

Aziz, KMA, "Present Trends in Medical Consultation Prior to Death in Rural Bangladesh." Bangladesh Medical Journal 6:11 1977:53-8

Bentley, M., Personal communication, July 15, 1985.

Bentley, M., "The Household Management of Child Diarrhea in Rural North India," paper presented at the Third Asian Conference on Diarrheal Diseases, June 10-14, 1985, Bangkok.

Booth, E.M. and C. O'Hara, "The Future of Qualitative Research in the Design and Implementation of Educational Programs in Developing Countries: A Report from the Field," Washington, D.C.: Academy for Educational Development, September, 1984.

Currey, M., personal communication, July 2, 1985, based on findings of NORP Evaluation. Dhaka: ICDDR,B (in preparation).

Farruque, A.S.G., et al, "Community Perception and Diarrhea Management Practices During Outbreaks in Rural Bangladesh," Dhaka: ICDDR,B nd.

Green, Edward, "Traditional Healers, Mothers and Childhood Diarrheal Disease in Swaziland: The Interface of Anthropology and Health Education," Social Science and Medicine 20:3, 1985:277-85.

Kuman, V. et al, "Maternal Beliefs Regarding Diet During Acute Diarrhea," Indian Journal of Pediatrics 48, 1981:599-603.

Lozoff, B., K. Kamain, and R. Feldman, "Infection and Disease in South Indian Families: Beliefs about Childhood Diarrhea," Human Organization 34:4, 1975:353-58.

Molla, A.M. et al, "Cereal Based Oral Rehydration Therapy Project," Dhaka: ICDDR,B, nd.

Risvi, N., "Nirog: A Native Food Category for Nutritional Management in Bangladesh" Dhaka: ICDDR,B, nd.

Risvi, N., personal communication, June 25, 1985.

Sarder, A.M. and L.C. Chen, "Distribution and Characteristics of Non-Government Health Practitioners in a Rural Area of Bangladesh," Social Science and Medicine, 15a:543-550, 1981.

Shahid, N. et al, "Beliefs and Treatment Related to Diarrheal Episodes Reported in Association with Measles," Tropical and Geographical Medicine, 35:1983:151-56.

Srinivasa, D.K. and E. Afonso, "Community Perception and Practices in Childhood Diarrhea," Indian Pediatrics 20: Nov., 1983:859-864.

ANNEX A: SELECTED TABLES

TABLE 1

TYPES OF DIARRHEA RECOGNIZED\* (n = 240)

<u>Type of Diarrhea</u>	<u>Number</u>	<u>Frequency</u>
General, ordinary or simple; <u>dasto</u>	178	74%
With continuous vomiting; <u>cholera</u>	151	63%
Bloody dysentery; <u>amashaya</u>	73	30%
Greenish, yellowish, mucousy	69	28%
With weakness	28	12%
With stomachache	20	8%
With worms	6	3%
With teething in children	2	1%

\*Multiple responses

TABLE 2

CAUSES ATTRIBUTED TO DIARRHEA\* (n = 240)

<u>Causes</u>	<u>Number</u>	<u>Frequency</u>
Bad, spoiled, or indigestible food	145	60%
Dirty or contaminated water	54	23%
Heat or hot weather	17	7%
Flies or exposed food	17	7%
Worms	15	6%
Evil spirits, evil eye, bad air, God's will	9	4%
Breast milk, bad breast milk	8	3%
Dirty hands or body	4	2%

\*Multiple responses

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TABLE 3

TREATMENT FOR DIARRHEA\* (n = 240)

<u>Type of Treatment</u>	<u>Number</u>	<u>Frequency</u>
"Doctors'," usually unqualified allopaths	126	53%
ORS or homemade solution	115	48%
Homeopathic	34	14%
Herbal medicines	23	10%
Mystical or religious	17	7%
Drinks or porridges	9	4% **
Don't know any	12	5%

\*Multiple responses

\*\*Special drinks and porridges underreported because these may not be thought of as treatments per se.

TABLE 4

COMPLICATIONS OR SYMPTOMS NOTICED IF DIARRHEA PERSISTS\* (n =240)

<u>Symptoms Noticed</u>	<u>Number</u>	<u>Frequency</u>
Weakness and/or immobility	181	75%
Death	85	35%
Fever or body heat	47	20%
Sunken eyes	41	17%
Weight loss	40	17%
Appetite loss, decreased digestive power	37	15%
Cold, clenched hands and feet	26	11%
Thirst or water loss	15	6%
Stomach pain	10	4%
Lose skin	7	3%

\*Multiple responses

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**TABLE 5**

**REASONS FOR TAKING ORS\*** (n = 240)

<u>Reasons for Taking</u>	<u>Number</u>	<u>Frequency</u>
Cures or treats diarrhea, cholera, dysentery	206	86%
Cures or prevents water loss or dehydration	39	16%
Don't know	14	6%
Keeps stomach or body "cool"	8	4%
Prevents diarrhea	4	2%
Quenches thirst	4	2%

\*Multiple responses

**TABLE 6**

**ORS USE: THOSE WHO HAVE EVER USED IT** (n = 240)

<u>ORS Use</u>	<u>Number</u>	<u>Frequency</u>
Have tried	139	58%
Have not tried	<u>101</u>	<u>42%</u>
	240	100%

TABLE 7

SOURCES OF INFORMATION OUTSIDE THE FAMILY ABOUT DIARRHEA\* (n = 240)

<u>Sources of Information</u>	<u>Number</u>	<u>Frequency</u>
Radio (and occasionally TV)	143	60%
Extension workers	89	37%
"Doctors," usually unqualified allopaths	85	35%
Friends and neighbors	16	7%
No sources	14	6%
Print media	8	3%
Schools	2	1%

\*Multiple responses

TABLE 8

DOES ORS STOP OR REDUCE DIARRHEA? (n = 243)

<u>RESPONSE</u>	<u>NUMBER</u>	<u>FREQUENCY</u>
Don't know	26	10%
No	31	13%
Yes, unspecified	40	16%
Yes, within 1 day	36	15%
Yes, in 1-2 days	71	29%
Yes, in 3-4 days	28	12%
Yes, in 5-6 days	6	2%
Yes, in 6-7 days		0.4
Yes, in more than 7 days	<u>4</u>	<u>2%</u>
	243	100%

TABLE 9

PERCEIVED EFFECTS OF ORS ON A CHILD\* (n = 240)

<u>Effects</u>	<u>Number</u>	<u>Frequency</u>
Strengthens child	118	49%
Nourishes child	81	34%
Does not strengthen	31	13%
Does not nourish	11	5
Quenches thirst	5	2%
Don't know	28	12%

\*Multiple responses

TABLE 10

LOCAL SOURCE OF ORS (n = 217)

<u>Source</u>	<u>Number</u>	<u>Frequency</u>
Local "doctors," usually unqualified allopaths	67	31%
Bazaars, markets	56	26%
Pharmacies	55	25%
Health centers, hospitals	<u>39</u>	<u>18%</u>
	217	100%

TABLE 11

LABON-GUR\* USE: THOSE WHO HAVE EVER USED IT (n = 239)

<u>Labon-Gur Use</u>	<u>Number</u>	<u>Frequency</u>
Have tried	146	61%
Have not tried	<u>93</u>	<u>39%</u>
	239	100%

\*Homemade sugar-salt solution

TABLE 12

USE OR NONUSE OF ORS, BY AGE (n =240)

	<u>Users</u>	<u>Nonusers</u>
Over 35 years	45% (61)	52% (55)
Under 35 years	55% (74)	48% (50)

TABLE 13

USE OR NON USE OF ORS, BY SEX (n =240)

	<u>Users</u>	<u>Nonusers</u>
Male	32% (44)	34% (35)
Female	68% (93)	66% (68)

TABLE 14

USE OR NONUSE OF ORS, BY LITERACY\* (n =211)

	<u>Users</u>	<u>Nonuser</u>
Literate	40% (48)	21% (19)
Nonliterate	60% (72)	79% (72)

\* Data incomplete on literacy.

TABLE 15

USE OR NONUSE OF ORS, BY PERCEPTION THAT  
ORS HAS NEGATIVE EFFECTS\* (n =207)

	<u>Users</u>	<u>Nonuser</u>
Has negative effects	6% (8)	8% (6)
Has no negative effects	94% (121)	92% (72)

\* "Don't knows" no counted.

TABLE 16

USE OR NONUSE OF ORS, BY BELIEF THAT ORS  
STOPS OR REDUCES DIARRHEA\* (n =202)

	<u>Users</u>	<u>Nonuser</u>
Stops/reduces diarrhea	86% (112)	86% (62)
Does not stop/reduce diarrhea	14% (18)	14% (10)

\* "Don't knows" not counted.

TABLE 17

USE OR NONUSE OF ORS, BY BELIEF THAT ORS  
EITHER STRENGTHENS OR NOURISHES  
A CHILD WITH DIARRHEA (n =221)

	<u>Users</u>	<u>Nonuser</u>
ORS strengthens or nourishes	67% (85)	53% (50)
ORS does not strengthen or nourish (including "don't knows")	33% (42)	47% (44)

TABLE 18

USE OR NONUSE OF ORS, BY BELIEF THAT DIARRHEA  
RIDS THE BODY OF IMPURITIES\* (n =205)

	<u>Users</u>	<u>Nonuser</u>
Diarrhea rids impurities	63% (77)	74% (61)
Diarrhea does not rid impurities	37% (46)	26% (21)

\* "Don't knows" not counted.

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