

PERCEPTION OF DIARRHOEA AND THE USE OF A HOMEMADE ORAL REHYDRATION SOLUTION IN RURAL BANGLADESH

A MUSHTAQUE R CHOWDHURY AND J PATRICK VAUGHAN¹

Senior Research Demographer and Head, Research and Evaluation Division, Bangladesh Rural Advancement Committee, 66 Mohakhali C/A, Dhaka 1212, Bangladesh; ¹Professor and Head, Evaluation and Planning Centre for Health Care, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom

Abstract

Oral rehydration therapy (ORT) is being widely promoted in developing countries, but the socio-cultural aspects of diarrhoea are often poorly investigated prior to planning the programmes. Since 1980, the Bangladesh Rural Advancement Committee (BRAC), a non-governmental organisation, has promoted a home-made ORT solution for use in all diarrhoeal episodes, called *lobon-gur* solution (LGS), which is made from household *lobon* (salt) and *gur* (unrefined sugar) using the 'pinch and-scoop' method. One mother per household is trained in its preparation and use during a half-hour home visit. By late 1986, over 7 millions of Bangladesh's 16-million households had been visited. Initial programme monitoring showed that most mothers could prepare a safe and effective solution, but that its use was less encouraging. A village study undertaken to investigate this low use found that villagers recognise four different types of diarrhoeal illnesses, which are *dud hāgā* due to breast-milk in infants; *ajirno* due to over-eating or bad food; *āmāsā*, a mucoid diarrhoea, with or without blood and of unknown cause; and *dāeriā* which is severe watery diarrhoea or cholera. LGS was most frequently used for *dāeriā* episodes which, although representing only 5% of all episodes, are those most likely to lead to dehydration and death. Thus, the BRAC message promoting LGS for all types of watery diarrhoea was understood by the people to be of most use for severe watery diarrhoea. The importance of this local classification of diarrhoea has only just received recognition, despite more than 25 years of diarrhoeal disease research in Bangladesh.

Key words: Diarrhoea; Oral rehydration solutions; Oral rehydration therapy; Anthropology, Medical; KAP; KAP surveys.

Introduction

In Bangladesh diarrhoea is endemic (1) and more than 250,000 people, mostly children, are estimated to die from it every year (2). Oral rehydration therapy (ORT) is now a proven treatment for the dehydration due to diarrhoea (3). Since 1980, the Bangladesh Rural Advancement

Committee (BRAC), a national non-governmental organisation (NGO), has been teaching mothers how to make ORT solution at home by using a three-finger pinch of household salt (*lobon*) and a fistful of unrefined sugar (*gur*), the *lobon-gur* solution or LGS (4). By late 1986, more than 7 millions of Bangladesh's 16-million households had been visited by BRAC workers and the method taught to the members, particularly the mothers of each family. However, evaluation showed that LGS was not much used during

Correspondence and requests for reprints should be addressed to Dr A M R Chowdhury.

The paper is a part of the Ph. D. thesis submitted by the first author to the University of London and the work was done jointly with the second author.

1988

villagers of similar backgrounds. The research approach relied on accumulating evidence from the different research methods outlined above, so that qualitative conclusions can be drawn. This technique has been termed the **convergent evidence** method of research (14). Weekly surveillance information was used to identify subjects for in depth interviews. The information and ideas arising out of such interviews were explored and revalidated in subsequent interviews. Conclusions were then further checked for convergence or divergence through informal and focus group discussions. Information found true for one village was then tested in the other for its consistency.

Later on, a large community survey involving 7,500 households randomly selected through a three-stage cluster sampling was conducted in three programme areas covered by BRAC. This survey aimed to measure the extent of use of LGS by asking questions on the occurrence of diarrhoea in the past two weeks and the treatment given. In the survey, questions were asked on the occurrence of the four types of diarrhoea described in the present study (see below). More details of this later study is given elsewhere (15). Data from this survey are provided here as they confirm the major findings of the village study.

Results

Perceptions

The study revealed four different types of illnesses perceived by people, particularly the mothers, which have some similarities with the clinical presentation of diarrhoea. These are as follows:

1. *Dud hāgā*: This is a type of loose motion which is attributed exclusively to breast-feeding: *dud* is milk and *hāgā** is purging in Bangla. The baby's stools are watery and they cry. The belief is held that breast-milk becomes polluted which causes its excessive flow. The colour of the stool, as stated by villagers, may even "resemble what the mother has eaten". The action taken may either be to stop breast-feeding or to stop the mother

* *Hāgā* in colloquial Bangla means both purging and stool

from eating green vegetables, fish, or meat. *Dud hāgā* is also called *bātāsī hāgā*. *Bātās* is wind and "if a mother catches bad wind", informed one mother, "her breasts will be heavy with polluted milk and when the child sucks the breast he will have *bātāsī hāgā*."

Many villagers consider *dud hāgā* a part of growing-up and hence requires no treatment. Some try LGS out of curiosity. If the *dud hāgā* persists, the mother may herself take and/or give the baby *pāni porā* (ritual water) or put on a *tābiz* (amulet) (11). Others may go to a local quack or a "barefoot" practitioner for a *dud injection*. A small amount of breast milk is extracted and taken in a cup and the practitioner takes 2 ml of it in a syringe. He then dilutes it with 1 ml of *distilled water* (water-for-injection) and injects it into the mother's arm. The belief is that the injection 'lightens' the breast and cures the child. Most practitioners give this treatment, but many would hesitate to admit. One who confessed put the following argument: 'The mother comes to me and asks for it. If I don't comply with the request she will find someone else and I lose my patient'. Some of them do not believe in *dud injection* and instead, give *atropin* injections to lighten the breasts.

2. *Ajīrno*: The literal meaning of this term is indigestion and may also be called *bod hajam*. This diarrhoea may be experienced by people of any age. The main cause, it is believed, is indigestion due to over-eating or food-poisoning leading to a stool of variable consistency accompanied by abdominal distension and a griping of the stomach.

This is hardly considered a disease by villagers. According to popular belief, one gets *ajīrno* when the stomach gets tired and hence the cure is simple - to rest the stomach. The head-master of a local primary school had *ajīrno* because he ate too much. He took a little salt and allowed his stomach to rest for a full day and was cured the following morning. LGS may aggravate the *ajīrno* as it contains *gur**, commented one bare-foot practitioner.

3. *Āmāsā*: This type of loose motions is experienced by people of all ages. Most *āmāsā*

* *Gur* is believed to have some laxative property.

episodes of diarrhoea in the rural community.

Epidemiological data have commonly been used in planning national ORT programmes in developing countries, but the limitations of such data are less well recognised. A low rate of ORT use, for example, may be due to planners ignoring information on local beliefs and perceptions concerning diarrhoea (5). Few ORT programmes appear to have taken seriously these socio-cultural aspects into consideration (6). Kendall *et al.* have shown how the use of ethnographic research ('ethnomedicine') helped shape an ORT programme in Honduras (7) and other investigators have emphasised the need to consider local perceptions about illness and its control in designing health-care activities, such as an ORT programme (8, 9, 10).

Little work has been done in Bangladesh on how people's cultural beliefs and perceptions of a disease affect their practices in handling it (11). There has been no such study on diarrhoea, except the one which was done in the tribal areas of Chittagong (12). Although there was no in depth social/anthropological study for the original BRAC ORT programme in Bangladesh, experiences from other rural development studies were generously used in its design. Frequent visits to the programme sites and conversations with villagers helped to make several changes in the programme; but when these ad hoc changes led to no significant improvement in the rate of using LGS, there was clearly a need for an in depth study. We present here the results of a village study in which attempts were made to determine people's beliefs, perceptions and customs concerning diarrhoea, and how these affected the use of the LGS. Some results from a subsequent community survey are also given as they complement the results of the present study.

Background of the BRAC ORT programme

On the basis of pilot research and field trials, BRAC developed a seven-point health message for mothers and other family members to teach them how to recognise dehydration; how to prepare ORT solution from household *lobon** (common

* Transliteration used here have been taken from a book given in the list of references (11).

salt), *gur* (unrefined sugar) and water, based on the 'pinch-and-scoop' method; how to feed a child properly during and after diarrhoea; and how to practise healthy habits to prevent diarrhoea (4). Female health workers, called oral replacement workers (ORWs), taught one mother in each rural household the technique to prepare LGS and then supervised her while she made the LGS herself during a face-to-face session lasting 25-30 minutes. Mothers were instructed to use LGS if their children had one or more loose motions per day, which was defined by BRAC as "diarrhoea" (1,4). A second group of workers, called monitors, assessed the quality of teaching and the ability of mothers to remember the procedure and prepare the LGS one month after the teaching session carried out by the ORWs. The results of such monitoring proved the high quality of the training in 90% of the mothers who were able to prepare a 'safe and effective' solution with a sodium concentration in the range of 30-99 mmol/l (1). The rate of use of LGS amongst diarrhoea patients was also assessed which found that less than 20% of all diarrhoeal episodes were treated with LGS over the previous 2-week recall period. More details about the BRAC programme have been reported elsewhere (4).

Materials and methods

The village study was done during July to September 1984 in two villages of 178 and 422 households in Comilla district, Chittagong division. The villages are situated close to a river system forming part of the riverine terrain of Bangladesh. A simple low-cost method of collecting data was used which included: a demographic survey of all households, weekly surveillance of households to record diarrhoeal episodes and treatments used, in depth interviews with villagers selected to represent a cross-section of age, sex, socio-economic and occupational statuses, and informal discussions with some of these people. The final method of collecting information was a series of seven focus group discussions* with

* In this social science research method, groups of 6-10 persons belonging to similar backgrounds (with respect to, for example, socio-economic and occupational statuses) are brought together to discuss an issue in the presence of a facilitator (13).

stool is not watery but it contains mucous. It may or may not be accompanied by blood and if it is bloody it is called *rokto āmāsā*. This is considered a disease but the cause is not clear to villagers.

The most popular treatment for *āmāsā* is *bonejī*, which is an informal school of medicine practised by elderly women. There are some who practise it for a fee. Most *bonejī* practitioners would not disclose their recipes. They use different herbs and mix them with juices of fruits and other materials, such as honey. *Bonejī* is different from *kabirājī* (16), a socially and legally recognised system of medical practice in the Sub-continent.

Any herb which is bitter is considered good for *āmāsā* and the most popularly used herbs are: *tīa mānkā*, *khān kunī* (*Cantella asiatica*), jute leaves, and black arum. Normal food is withheld. Soft unfluffed rice of *kāon* type is sometimes given with mustard oil.

4. *Dāeriā* or *Cholera*: This is considered to be a serious disease which takes lives when it comes in epidemic form). In the words of a village elder: "Dāeriā is dreadful and I prefer not to make mention of it. It used to be a big problem previously but it is not so common now. If it gets someone, he can hardly think of surviving without visiting Matlab" (the field treatment centre of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), situated about 50 kilometres downstream from the study villages).

"It is like *Ajrāil* (the Angel who takes life), a curse from God and people can have it if they are disobedient to Him", commented another villager. People can also get *dāeriā*, the villagers believe, if they walk through a graveyard or a crematorium. Others feel that this is caused by eating bad or rotten food. Children get it when they eat mud and sand. The common symptoms are stated to be frequent purging of stools which look like rice-cleaned water, weakness which makes it hard even to walk, sunken eyes, thirst, continual vomiting and reduced urine.

Dud hāgā and *ajirno* are not considered to be *dāeriā*, but severe *ajirno* or *dud hāgā* when accompanied by vomiting may turn out to be *dāeriā*. For *dāeriā*, the patients are taken to the treatment centre of the ICDDR,B at Matlab, but before this in done treatments, such as LGS, are

tried. If one cannot afford to go to Matlab, a local bare-foot doctor or a registered medical practitioner may give the patient intravenous (i.v.) saline and antibiotics. For *dāeriā*, according to a bare-foot practitioner, LGS or packet saline may be given but sulph drugs are recommended to cure the patient.

Confirmation of the findings through community survey

As stated in the methods, people's classification of diarrhoea was probed in other parts of the country. During a community survey, following the present village study, we visited 11 of the 21 districts of Bangladesh. Through informal and focus group discussions with villagers, the general classification of diarrhoea described above was confirmed. There were, however, differences in the names used to denote a particular type of diarrhoea. For example, what was *dud hāgā* in the villages of Comilla district was called *buni hāgā* in Sylhet or *bāu bātās* in Barisal district; what was *rokto āmāsā* in the study villages was called *lōu kāmri* in Sylhet, and so on. We now examine the consistency of this classification by referring to the results from the community household survey.

Table I shows the percentage of episodes of each type of diarrhoea and the annual per-person rates estimated on the basis of a 2-week recall period. It shows that the proportions of the four types of diarrhoea are very similar in the three sample areas surveyed, although some differences in incidence rates exist. An analysis of the types of diarrhoeal episodes by age showed no particular trend except for *dud hāgā* where all episodes in all the areas occurred, as expected per its definition, in children less than 5 years of age (not shown in table).

Table II shows that the use of LGS is much higher in episodes of *dāeriā* compared with other types, with the lowest use in the *āmāsā* type.

Reasons for the infrequent use of LGS

The weekly survey identified non-users of LGS and based on interviews with them and other people, such as quacks, quasi-recognised bare-foot doctors and registered medical practitioners, a range of reasons emerged to

TABLE I - % OF REPORTED DIARRHOEAL EPISODES AND ESTIMATED ANNUAL INCIDENCES BY TYPES OF DIARRHOEA IN THREE DIFFERENT PROGRAMME AREAS

Diarrhoea types	Programme Areas					
	1		2		3	
	% of epis*	AI†	% of epis*	AI†	% of epis*	AI†
<i>Dud hāqā</i>	11.5	0.21	12.5	0.35	12.9	0.48
<i>Ajirno</i>	50.4	0.91	52.4	1.50	47.9	1.77
<i>Āmāsā</i>	33.0	0.59	30.1	0.86	35.0	1.29
<i>Dāeriā</i>	5.0	0.09	5.0	0.14	4.2	0.15
All	100	1.80	100	2.85	100	3.69
No. of episodes	1023		1534		1940	
No. of household surveyed	2329		2289		2292	

* Episodes

† Estimated annual incidence of diarrhoea per person

TABLE II - USE OF LOBON-GUR SOLUTION, EXPRESSED AS % OF ALL REPORTED DIARRHOEAL EPISODES*, AMONG THE FOUR TYPES OF DIARRHOEA IN THREE DIFFERENT PROGRAMME AREAS

Diarrhoea types	Programme Areas		
	1	2	3
<i>Dud hāqā</i>	2.0	12.2	12.3
<i>Ajirno</i>	4.0	7.9	9.8
<i>Āmāsā</i>	1.6	2.9	4.0
<i>Dāeriā</i>	25.6	31.6	52.2
All diarrhoea	4.1	8.2	9.9

* An episode means any diarrhoea irrespective of whether the patient received treatment or not.

explain why some people did not use the LGS. These are presented below.

Confusion with the definition of diarrhoea

The majority of non users reported that they did

not use LGS, because their illness was not *dāeriā*. "The ladies (meaning BRAC ORWs) told us to give it for *dāeriā* or *cholera*. We don't have *dāeriā* or *cholera* in the village", was a typical answer from a village woman when asked about not using LGS to treat children with loose motions. A fisherman, when his young son had loose motions, went to his aunt for *bonejī*, rather than to use LGS, because the members of his family were not sure whether his son had *ajirno* or *dāeriā*.

Misconception about the curing ability of LGS

Some persons had used the solution previously, but it did not stop the loose motions on those occasions and they lost faith in it. [The scientific observation that a child with diarrhoea receiving ORT remains safe in spite of his purging not being controlled promptly—was not told during the mothers' education on the preparation and use of LGS] Thus, the poor villagers lost money for the treatment of their children's diarrhoea, when they had to take them to doctors who gave the patients i.v. saline and capsules. A BRAC field staff witnessed a mother to refuse, even at the

ICDDR,B treatment centre in Dhaka, to allow her son to be treated with ORS. She wanted him to be given i.v. fluid in spite of his dehydration not severe enough to require it. A polite but futile attempt was made to convince her on the effectiveness of ORT. She finally took her son away.

Poor availability of gur

Non-availability of *gur* was cited by villagers as a reason for not using LGS. In the villages, only about 10% of the households were found to possess *gur*. The availability of *gur* is also seasonal and coincides with the harvest of sugarcane and date juice. Refined sugar was found to be as frequently available as *gur*. The price of sugar was higher, but many people preferred to use it, because they believed that they would command a higher social status by doing so.

Method of preparation and feeding

To some busy persons, like head-master of a village-school, the simple preparation of LGS appeared cumbersome. Some others felt that it is quite difficult to feed LGS to babies. In the opinion of a physician, who worked at the Dhaka Shishu (children) Hospital for some time, to feed ORS to the babies is not easy. Other persons said that the children did not like the smell or taste of the solution.

Antagonistic attitudes of health practitioners

One of the authors talked with all types of health practitioners in the study villages, such as quacks, homoeopaths, practitioners of kabiraji herbal medicine, bare-foot and registered doctors. Unfortunately, none appeared to actively promote LGS. Some of them even regarded LGS to be of low-status and not a very effective medicine. The head of the local government dispensary told us that he always advises his patients to take LGS; but when several of his diarrhoea patients were asked what had he prescribed, LGS was not mentioned. Similar cross-checking with patients of other practitioners indicated that the practitioners exaggerated their role as promoters of LGS. (A strong government policy is to

promote ORT for diarrhoea.) Intelligent persons like a teacher opined that a doctor cannot suggest *lobon-gur* which is against his business. One mother confided, "the doctor said LGS does not work". On the whole, the practitioners created a subtle impression that LGS is an inferior type of cure.

Discussion

This paper explored the perceptions of Bangladeshi villagers about diarrhoea and its treatment and how this affected their use of homemade ORT solution, viz. the *lobon-gur* solution or LGS. It showed that the Bangladeshi villagers studied have a classification of four different types of loose motions, each perceived as a different condition with a separate cause and treatment. This finding was confirmed in other districts of Bangladesh, although different names were used to denote a particular diarrhoea type. A community survey provided data which substantiated these findings as it found consistently similar proportion in each type of diarrhoea in three different sample areas.* The most infrequently occurring type was *dāeriā* and the signs of this, as mentioned by villagers, were those of severe dehydration. However, data are not available to ascertain the aetiological nature of the four types of diarrhoea which will need further research.

Findings similar to ours have been recorded elsewhere. We know of *empacho* or *caida de mollera*, etc. in Honduras (7); the five types of folk illnesses in north-east Brazil (17); *behdī*, *dosham*, etc. in South India (18); or *umsheko*, *kuhabula*, etc. in Swaziland (10). All these are diarrhoea, but villagers consider them to be different conditions. The perception of diarrhoea has not been studied before in Bangladesh, which is surprising in a country where diarrhoea research has been a major activity for the last 25 years by ICDDR,B (formerly Pakistan-SEATO Cholera Research Laboratory). It is also significant that a national

* Another study done in 1987 in 6 villages of Dhaka, Khulna and Rajshahi divisions also found the existence of the four types of illness as found here (Report on qualitative study on oral rehydration therapy. Dhaka: Family Planning Social Marketing Project, June 1987).

and rural-based organisation, such as BRAC, began an ORT programme without giving adequate attention to assessing people's perceptions on diarrhoea. How many carefully planned health programmes can trace their failures to 'top down' planning which ignored the perceptions of the people - the very people who might benefit from these programmes?

The other important finding from the village study relates to the reason for the infrequent use of LGS. The mothers misunderstood what they were taught by the oral replacement workers who emphasised the word 'diarrhoea' which was interpreted by mothers as *dāeriā* or only severe watery diarrhoea or cholera. Hence LGS was used infrequently to treat other types of loose motions (Table II). However, since *dāeriā* was the most infrequently occurring type (only 5% of episodes), the effect of a high use for this type was minimal on the overall use. The major purpose of ORT is to prevent deaths due to dehydration, the risk of which is greatest in patients with *dāeriā*. The higher use of LGS in this type of loose motions may, thus, lead to a decrease in diarrhoeal deaths in rural Bangladesh. Studies being done by BRAC will test this hypothesis.

The passive and frequently negative attitudes of all types of local health practitioners, despite BRAC trying to enlist their support, suggest that the use of LGS is in direct competition with their interests. Research is needed to find ways of obtaining a more positive support.

The poor or seasonal availability of *gur* is a serious limitation to the use of LGS. If the *gur* is available at home, it becomes much easier for mothers to use LGS. Refined sugar is also not widely available and it is more expensive than *gur*, but its social value, however, is much greater since its use carries status. Substitutes for *gur*, such as refined sugar or rice powder, must be considered for use along with *gur*. There were also misconceptions on the part of the villagers that LGS promptly cures purging. This belief needs to be dispelled by informing villagers clearly that most of the time LGS does not promptly cure purging, but, in fact, the purging may sometimes increase. However the patient does not become dehydrated and eventually the diarrhoea stops. BRAC has been prompt to accept the findings of the study to modify its programme. A new 7-point message

has been developed which emphasises the use of LGS for each of the four types of diarrhoea (see Appendix) and refined sugar is now recommended as a substitute for *gur*. A research study has been undertaken to explore the capacity of mothers to make a rice-based ORS at home and to investigate its acceptability. The new message also emphasises the rehydration property of LGS and the mothers are told that it is not meant to cure the loose motions of their children promptly, but to prevent dehydration until the diarrhoea eventually stops.

Acknowledgements

Financial and other assistance were provided by the Swiss Development Cooperation and the Bangladesh Rural Advancement Committee. In particular we wish to thank Dr. I Cornaz and Mr. F H Abed of these organisations for their support and encouragement. Comments on an earlier draft of this paper were received from Dr. K M A Aziz of ICDDR, B which is gratefully acknowledged. However, it is to the people of the study villages to whom we owe a special thanks for sharing with us their knowledge and understanding on diarrhoeal diseases.

References

1. Ellerbrock TV. Oral replacement therapy in rural Bangladesh with home ingredients. *Trop Doct* 1981; 11:179-83.
2. Guerrant RL, Cash RA. Infectious disease: treatment of cholera and other diarrheal illness. In: Chen LC ed. *Disaster in Bangladesh*. Oxford: Oxford University Press, 1973:81-94.
3. Cash RA. Oral therapy for diarrhoea. *Trop Doct* 1979; 9:25-30.
4. Abed FH. Household teaching of ORT in rural Bangladesh. *Assign Child* 1983; 61/62:250-65.
5. Hielscher S, Sommerfeld J. Concepts of illness and the utilization of health-care services in a rural Malian Village. *Soc Sci Med* 1985; 21:469-81.
6. Chowdhury AMR. Evaluating ORT programmes. *Health Pol Plann* 1986; 1:214-21.
7. Kendall C, Foote D, Martorell R. Ethnomedicine and oral rehydration therapy: a case study of ethnomedical investigation and program planning. *Soc Sci Med* 1984; 19:253-60.

8. de Zoysa I, Carson D, Feachem RG, Kirkwood B, Lindsay Smith E, Loewenson R. Perception of childhood diarrhoea and its treatment in rural Zimbabwe. *Soc Sci Med* 1984; 19:727-34.
9. Elmendorf M, Iseley R. Public and private roles of women in water supply and sanitation programme. *Hum Organ* 1983; 42:195.
10. Green EC. Traditional healers, mothers and childhood diarrhoeal disease in Swaziland: the interface of anthropology and health education. *Soc Sci Med* 1985; 20:277-85.
11. Maloney C, Aziz KMA, Sarker PC. Beliefs and fertility in Bangladesh. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh, 1981. 366p. (Monograph No. 2).
12. Nalin DR, Haque Z. Folk beliefs about cholera among Bengali Muslims and Mogh Buddhists in Chittagong, Bangladesh. *Med Anthropol* 1977; 1:56-8.
13. Folch-Lyon E, Trost JF. Conducting focus group sessions. *Stud Fam Plann* 1981; 12:443-9.
14. Chowdhury AMR. Evaluation of a community based oral rehydration programme in rural Bangladesh. London: University of London, 1986. 303 p. (Thesis).
15. Chowdhury AMR, Vaughan JP, Abed FH. Use and safety of homemade ORS: an epidemiological evaluation from Bangladesh. *Int J Epidemiol* 1988; 17:655-65.
16. Sarder AM, Chen LC. Distribution and characteristics of non-government health practitioners in a rural area of Bangladesh. *Soc Sci Med* 1981; 15A:443-50.
17. Nations MK. Illness of the child: the cultural context of childhood diarrhea in north-east Brazil. Berkeley: University of California, 1982. (Thesis).
18. Lozoff B, Kamath KR, Feldman RA. Infection and disease in south Indian families: beliefs about childhood diarrhoea. *Hum Org* 1975; 34:353-8.

APPENDIX

The Seven Points to Remember

1. What is *dud hāgā*, *ajīrno*, *āmāsā*, *dāeriā* or *Cholera* and their bad effects?

Dud hāgā, *ajīrno*, *āmāsā*, *dāeriā* or *cholera* etc. are all characterised by loose motions. With each loose motion salt and water drain out

from the body. If this draining out of salt and water continues for sometime, the body becomes dehydrated. Severe dehydration mostly leads to death. So, action should be taken in time in case of *dud hāgā*, *ajīrno*, *āmāsā*, *dāeriā* and *cholera*.

2. Symptoms of dehydration

The dehydrated patient develops certain signs and symptoms such as sunken eyes, dry tongue, thirst, sunken fontanelle (in case of a child), severe weakness, reduced volume of urine, etc.

3. Simple management of loose motions

The simple treatment for dehydration is to replace salt and water lost from the body. Remember, the patient dies of dehydration (loss of salt and water). So, whenever a patient gets *dud hāgā*, *ajīrno*, *āmāsā*, *dāeriā* or *cholera*, give oral saline from the very onset of the disease (immediately after the first loose stool).

4. Preparation of oral saline

Oral saline is prepared with a three finger pinch (up to the first crease) of *lobon* and one fistful of *gur* in half a *seer** of drinking water, well stirred. Care should be taken to mix *lobon*, water and *gur* in right proportion. A fistful of (refined) sugar can be used if *gur* is not available.

5. Administration of oral saline

Adult patients should take half a *seer* of oral saline at a time after each loose motion. Children should be given only as much as they want, but at frequent intervals. Once saline is prepared, it may be kept 4-6 hours only.

6. Advice on nutrition

During *dud hāgā*, *ajīrno*, *āmāsā* or *dāeriā*, the patient should be given plenty of water and food-stuffs like rice, curry along with oral saline. In case of children, breast milk/normal diet should be continued. Increased amount of food should be given at least for 7 days after recovery. This will prevent malnutrition and weakness of the patient.

7. Prevention

To save ourselves from this disease, we

* A *seer* is equivalent to 934 ml.

should drink tubewell water. In case tubewell is not available, water from other sources should be boiled and then cooled before use. Rotten food should never be eaten. All food-stuffs should be covered well so that flies cannot sit on them. Hands and mouth must be washed by soap or safe water before

eating. Hands should be washed by soap or ash after return from latrine and even after cleaning the babies after defaecation. Remember that breast-milk is harmless. Children put to breast immediately after birth and breast-fed continuously rarely have *dud hāgā*.