

Teaching ORT to women: individually or in groups?

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Summary

Programmes to promote the widespread use of oral rehydration therapy (ORT) for diarrhoea used a variety of methodologies to carry the message to mothers. The Bangladesh Rural Advancement Committee (BRAC) sent its health workers to individual households, and mothers were trained through a one-to-one approach. The cost of training a mother was 72 US cents. Recently, an alternative approach was tried. Instead of individually, mothers were trained in groups which halved the cost. Outcome indicators, such as usage, knowledge and safety of ORT solution, were looked at for each type of approach and were not found to be significantly different.

Introduction

Oral rehydration therapy (ORT) is a proven treatment method for most types of diarrhoea (Cash 1979). Programmes to popularize the widespread use of ORT have been started in many developing countries (Cash & McLaughlin 1983).

Most programmes have emphasized teaching the preparation and use of ORT to mothers and they have used a variety of ways to do this. In Egypt, the 'Strengthening Rural Health Delivery' (SRHD) project taught different types of ORT (packet, salt-sugar solutions) to mothers by nurses three to nine times at an interval of 4-6 weeks, through home visits (Mobarak *et al.* 1980). In Indonesia, local volunteer health workers provided treatment and teaching on ORT from their houses (Lerman *et al.* 1985). In

Honduras (Corrales *et al.* 1983) and the Gambia (Shepard & Brenzel 1985) the teaching on ORT was provided through radio.

One of the most widely discussed programmes is run by the Bangladesh Rural Advancement Committee (BRAC). Through this programme, trained female workers visit rural households once and teach one mother from each about the preparation and use of *lobon* (salt)-gur (unrefined sugar) solution with the pinch-and-scoop method through a one-to-one and face-to-face session (Cutting & Ellerbrock 1981; Abed 1983). Evaluations looking at different aspects, including costs, have been carried out (Chowdhury 1986a; Chowdhury *et al.* 1988a). In a recent study, the cost of the programme was calculated to be 72 US cents per household visited which included all costs including salaries, overheads and evaluations (Chowdhury 1988).

Even though the cost referred to above is small since the mothers are taught to use ORT with home ingredients and there are no further recurrent programme costs, questions have been raised as to whether this can further be reduced without affecting the programme quality. The BRAC workers visit mothers in their houses and teach them individually. What if the mothers are taught in groups and not individually? Will this reduce the costs of the programme? If it does, will it affect the programme quality with respect to such indicators as usage and safety of the solutions?

With the above questions in mind, a study was carried out by the Research and Evaluation Division of BRAC to compare the outcomes (with respect to usage and safety) of two approaches in teaching ORT: individually and in groups. Results from this study are presented in this paper.

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Table 1. Scoring system in knowledge test for the Seven Points To Remember

	Message	Score for correct answer
1.	Definition of diarrhoea	1
2.	When loose motion turns diarrhoea?	1
3.	Treatment	1
4.	When to begin LGS and why?	1+1
5.	How much to give? (for children and adults)	1+1
6.	Prevention	1
7.	Nutrition (during and after episode)	1+1
	Total score	10

Methods and materials

The Oral Therapy Extension Programme (OTEP) of BRAC introduced group teaching on an experimental basis in early 1986 in the Islampur upazila (sub-district) of Jamalpur district. In a village, a female Health Worker (HW) of BRAC introduced herself to mothers and asked five of them (one from each household) to gather in a house convenient to all of them and also to bring a drinking water pot with them. The HW then taught them about the 'Seven Points to Remember' (Abed 1983) which is the message given by BRAC on ORT (identification of diarrhoea and preparation and use of ORT). After the teaching, the HW asked each mother present to prepare the lobon-gur solution (LGS) herself under the supervision of the HW herself.

For comparison, we selected another upazila, Sherpur Sadar, under Sherpur district which is close to Jamalpur, where the teaching was carried out on an individual basis each taking about the same time as in Islampur. In this upazila, the HW, instead of teaching mothers in a group, visited each household and taught one mother at a time following the same way as in Islampur.

One year later, female interviewers from the Research and Evaluation Division of BRAC visited both areas and interviewed 2500 households (Chowdhury 1986a) in each upazila which were selected through a multi-stage random sampling procedure. Structured interview schedules were used which contained information on the incidence of each of the four folk

types of diarrhoea (Chowdhury *et al.* 1988a) during the previous two weeks (Chowdhury 1986b) and treatment used and knowledge of the mother on each of the seven points. At the end of the interview, a random 5% of the mothers were asked to prepare an LGS for the interviewers. A sample of this solution was taken in a screw-cap vial which was later analysed for chloride* at the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), Dhaka.

The knowledge of the mother as found through interview was quantified on a scale from 0 to 10. Each point of the message was given a score if answered correctly as shown in Table 1.

Results

COST

Cost information on each area was obtained from the Accounts Section of BRAC in Dhaka where adequate relevant information was found. In Islampur upazila where the ORT teaching was done through the group approach,

*Most often sodium is used as an indicator of the safety of ORT solution. However, because of cost considerations, BRAC has been doing chloride analysis which is found to be a good proxy indicator for sodium. Through a regression equation ($\text{sodium} = 3.29 + 0.95 \text{ chloride}$) based on simultaneous analysis of both sodium and chloride on 50% subsample of the solutions, sodium concentrations were estimated from chloride concentrations. Research carried out at ICDDR,B also found a high correlation ($r = 0.98$) between chloride estimated through chloro-counter and sodium estimated through flame photometry (Ali & Wahed 1984).

Table 2. Costs of the programme in the two upazilas

Name of upazila	Amount spent (Taka)	Mothers taught	Cost per mother taught (Taka)
Islampur (Group)	21 257	2498	8.51
Sherpur Sadar (Individual)	59 064	3851	15.34

Table 3. Number of episodes of the four diarrhoea types and number using LGS (usage) in the two upazilas

Type of episode	Islampur (group)			Sherpur Sadar (individual)		
	Episodes	No. using LGS	Usage (%)	Episodes	No. using LGS	Usage (%)
Dud Haga	116	6	5.2	88	3	3.4
Ajirno	338	15	4.4	324	19	5.9
Amasha	226	4	1.8	310	8	2.6
Diarrhoea	7	3	42.8	11	3	27.3
All types	687	28	4.1	733	33	4.5

Table 4. Knowledge of mothers about the seven points (score) in the two upazilas

Score	Islampur		Sherpur Sadar	
	No.	%	No.	%
10	40	28.4	46	31.9
7-9.5	57	40.4	63	43.7
<7	44	31.2	35	24.4
All	141	100.0	144	100.0
Average score	7.7		8.0	

Table 5. Sodium concentrations (estimated via chloride) in LGS prepared by mothers in the two upazilas

Sodium (in mmol l ⁻¹)	Islampur		Sherpur	
	No.	%	No.	%
<30	15	10.6	10	6.9
30-99	116	82.3	127	88.2
100-119	7	5.0	4	2.8
120+	3	2.1	3	2.1
n	141	100.0	144	100.0
Mean	60.5	mmol l ⁻¹	55.6	mmol l ⁻¹
s.d.	21.8		20.5	
Highest	126	mmol l ⁻¹	128	mmol l ⁻¹
Lowest	16	mmol l ⁻¹	19	mmol l ⁻¹

an amount of Taka 21 257* was spent in supporting the field teams. In Sherpur Sadar upazila where the ORT teaching was done on an individual basis, an amount of Taka 59 064 was spent. It may be mentioned that these represent only the direct field costs and do not include overall programme support costs incurred at other levels, such as through BRAC's head office. These are difficult to apportion and are expected to be the same for each of the two upazilas.

In Islampur upazila, the HWs taught mothers from 2498 households and in Sherpur Sadar, the HWs visited mothers in 3851 households. The average costs per mother taught was Taka 8.51 for Islampur and Taka 15.34 for Sherpur Sadar as indicated in Table 2.

USAGE

Usage of LGS was defined as proportion of the diarrhoeal episodes occurring over two weeks previous to the survey, which used LGS (Chowdhury 1986b). For a better reporting of events we used the folk definitions of diarrhoea and asked questions on each of the four types of loose motions (Chowdhury *et al.* 1988a). Table 3 shows the number of episodes in each type as found in the survey and numbers using LGS. The table shows that the overall usage rate of LGS is very low at 4.1% for Islampur and 4.5% for Sherpur. Similarly low rates are also seen in the three non-severe types (*viz.*, Dud Haga, Ajirno and Amasha). However, the usage is encouraging in the 'Diarrhoea' type which is considered to be severe watery diarrhoea. In this type also, the number of cases was too small to draw any meaningful conclusion.

The difference between the two upazilas with respect to usage is negligible ($P > 0.05$).

KNOWLEDGE OF THE SEVEN POINTS

Table 4 shows the mothers' knowledge of the seven points which was quantified on a scale from 0 to 10.

It shows that 69% of the mothers in Islampur and 75% in Sherpur Sadar scored 70% or more. The average marks obtained by mothers in

Islampur (7.7) and Sherpur (8.0) were not significantly different ($P > 0.05$).

SAFETY

Table 5 shows the composition of the LGS solution prepared by mothers with respect to sodium (estimated via chloride) concentrations.

It shows that there is hardly any difference between the two upazilas (mean statistically insignificant). Measurement of water used in making the LGS was also done and no significant difference was found between the two upazilas.

Discussion

This paper reports a research which looked at the relative strengths and weaknesses of two approaches of teaching ORT to mothers, *viz.*, individually and in groups. The cost of the programme in each approach was worked out and showed that the implementation cost was twice as high for the individual approach. A few outcome indicators were looked at to find other strengths and weaknesses. These included usage, knowledge and safety of composition of the solution made. In each of these there was no significant difference between the mothers who were taught ORT through the two approaches. It seems reasonable, therefore, for the BRAC programme to switch to a group approach of teaching which would save about half of the expenditure without significantly affecting the quality of the programme with respect to the indicators studied.

The results also show the state of the BRAC programme. Usage has not improved since the last study of 1984 (Chowdhury *et al.* 1988a), although the usage in severe watery diarrhoea appears to remain encouraging (barring the small numbers). The composition of the solution has, however, shown improvements since the study of 1984. In 1984, the proportion in an undesirable range (sodium 120 mmol l^{-1} or more) was 15% whereas it has been reduced to 2%, much to the relief of observers. This has been made possible by a few changes which have been incorporated into the programme which included more publicity through the radio, more training to the workers and revision

*US \$1 = Taka 30.

of the Seven Points to give greater emphasis to the dangers of mixing too much lobon (salt).

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