Evaluation of Doctors Trained at Diarrhoea Training Unit of National Institute of Child Health, Karachi

Pages with reference to book, From 7 To 11

Siddiqa Ibrahim,Zeenat Isani (National Institute of Child Health, Karachi.)

Abstract

Diarrhoeal diseases are a major contributory factor for high infant mortality and morbidity in Pakistan. To overcome this, Government of Pakistan launched a National Programme for Control of Diarrhoeal Disease. A Diarrhoea Training Unit (DTU) was established at the National Institute of Child Health, Karachi, where apart from proper case management, 17 training workshops were held between July, 1989 to July, 1991. Eighty-five doctors from various facilities in Sindh were trained in proper management of diarrhoea and establishment of Oral Rehydration Therapy (ORT) units in their regions. Evaluation of DTU training, assessment of the knowledge of trained doctors, case management and function of ORT Units were done between September, 1992 and October, 1993. Two teams each consisting of a doctor and a lady health visitor, visited 30 such facilities. An observation check list was used for assessing the ORT unit and diarrhoea case management and a test questionnaire for the knowledge of facility physician and paramedic. Of the 29 facilities, 17 had DTU trained doctors. ORT corner had been established in 26, weighing scales were used in 21, record keeping in eight and soap and water was available for hand washing in seven centres. The presence of untrained doctors provided an opportunity to compare the two groups. Dehydration assessment was fairly good, weight was recorded in fewer cases than desirable, case management was similar in the two groups, except for infrequent use of antibiotics by the trained group. Prevention was poorly advised. Physicians' knowledge in both groups was similar but deficient in advising the use of ORS, feeding in diarrhoea and nutritional assessment. The trained ones had significantly better knowledge about drugs and this was reflected in their case management. Paramedic case management were similar to those in doctors. The study thus showed positive and beneficial effects of training (JPMA 47:7,1997).

Introduction

Diarrhoea! diseases are a leading cause of childhood mortality and morbidity in developing countries[1,2]. In Pakistan, diarrhoeal deaths are a major contributory factor for a high infant mortality[3,4]. Appropriate case management is recognized as an important factor in reducing diarrhoeal mortality and morbidity[1]. The Government of Pakistan therefore, planned a National Programme for the Control of Diarrhoea! Diseases (CDD) during the 7th development plan (1988-93). Implementation of the National Diarrhoeal Treatment policy was its mainstay. The policy emphasizes use of oral rehydration therapy (ORT) plus continued feeding, intravenous fluid therapy (ORT) plus continued feeding, intravenous fluid therapy reserved for severely dehydrated patients, use of drugs only svhen indicated, education of parents regarding home management and prevention of diarrhoea and dehydration.
In March, 1989, the Government of Pakistan launched a nation wide diarrhoea training unit (DTU) pmjeet. DTUs were attached to teaching hospitals, thesebeing the role models and trend setters. In the initial phase, 10 DTUs were setup in major teaching hospitals.In the next phase, DTUs were to be established in the remaining teaching hospitals of the country. A DTLJ is a service unit consisting of:
a) A triage or reception area where patients are eceived and the degree of dehydration assessed.
b) An ORT corner where patients receive oral rehydration therapy and mothers are educated regarding

ORT, feeding, prevention of diarrhoea, dehydration and immunization.
c) A ward where severely dehydrated or complicated patients are treated.
The purposes of a Diarrhoea Training Unit are:
1. To train DTU physicians and health workers in the management of patients according to the National Diarrhoea treatment policy.
2. To hold workshops to update the knowledge, attitude and practice of participants regarding appropriate diarrhoea ease management.
3. To prepare the participants to establish an ORT corner in their own health facility and train their fellow medical and paramedical staff for proper diarrhoea! ease management.
In mid-89, a DTU was established at the National Institue of Child Health (NICH). Karachi. Seventeen workshops for standard diarrhoea case management were conducted between July, 1989 and July, 1991. In these workshops, each of 5 to 7 days duration, 85 medical officers from various health facilities including Basic Health Units (BHUs), Rural Health Centres (RHCs) and Taluka hospitals from the interior of Sindh were trained. Apart from lectures and videos, they were also given practical experience through 'Hands on Training'. They were provided with reading and teaching materials like charts, audiovisual aids, to carry out diarrhoea case management training at their respective facilities, This study was designed to evaluate the impact of training on the management of diarrhoea cases and to assess the achievement of the objectives.

Subjects and Methods

Doctors from 30 health facilities in the province of Sindh, (4 urban and 26 rural), trained through workshops conducted at National Institute of Child Health, Karachi in management of diarrhoeal diseases, were evaluated in the period between September, 1992 to October, 1993. The assessment prOtocol included:
a) Status of the existing ORT units.
b) Practices of physicians and paramedics by observation of diarrhoea case management.
c) Knowledge of physicians and paramedics, as assessed through administration of a questionnaire. An observation checklist was used to assess the functioning of the ORT unit including staffing. ongoing training, record-keeping and health education. Separate observation check lists and questionnaires based on the National Diarrhoea Treatment Policy were used for physicians and paramedics. The standardised check list used for evaluation of practice of doctors, allowed recording of observation on:
i) Histoiy taking regarding duration of diarrhoea (in days), number of wately stools in the last 24 hours, blood in stools, vomiting, its frequency and urine output.
ii) Examination of weight, skin turgor. eyes and fontanelle.
iii) Case management: Patient given ORT in the facility. ORS packets given for home use. ORS prepared before the mother, breast feeding continued, intravenous fluid used in severely dehydrated patients, use of drugs, as antidiarrhoeals, antiemetics, antibiotics.
iv) Advice on amount, preparation and administration of ORS . breast feeding, dangers of bottle feeding, weaning, prevention (hand washing, immunization) and followup.
The questionnaire used for testing the knowledge of doctors was the same as the post-training workshops test at the NICH DTU. It included multiple choice questions, case histories and some open ended questions onvanous aspects Qf dehydration, oral rehydration, feeding and appropriate use of drugs in diarrhoea. The doctors and paramedics were assessed separately. The doctors were both trained and untrained. All 69 doctors present at the time of assessment were examined for their knowledge of diarrhoeat disease management. Observations were limited to 57 doctors (25 trained and 32 untrained) only who were examining the patients.
The paramedics had received no formal training but some had been guided by the DTU trained facility

doctor. Sixty observations were made on 43 paramedics as some attended to more than one patient. A questionnaire with simple open ended questions on diarrhoea management and prevention was used. The assessment was made by a team of doctors and lady health visitors especially trained for the purpose. The doctor examined the ORT unit and its physician whereas the LHV evaluated the paramedical staff. The data was analysed using Epi Info version 5, Knowledge and practices through univariate analysis such as frequencies and
bivariate analysis was used to compare the trained and untrained groups. Chi square test with Yates correction was used for the P value to detennine significance.

Results

Thirty facilities of the Diarrhoea Training Unit (DTU) were evaluated to assess the impact of the training programme conducted for the doctors at the NICH, Karachi. Thirty health facilities were surveyed and the status of the services available assessed.

Table I. Status of health facilities evaluated (n=30).

	No.	Percentage
Doctors present	29	96.7
Paramedical staff present	28	93.3
ORT corner present	26	86.7
Satisfactory record keeping	8	26.7
Posters regarding diarrhoea	22	73.3
Weighing scale used	21	70.0
Regular ORS supply	29	96.7
Soap and water available	7	23.3

Table I shows that only 17 facilities had trained doctors. ORS packets were present in abundance at29 centres, approximately a month's supply and weighing scales were provided in 28 facilities but were available for use in 21 only, the remaining being kept locked up. Observations on doctors for diarrhoea case management was carried out on the remaining being kept locked up. Observations on doctors for diarrhoea case management was carried out on 57 professionals (25 trained and 32 untrained).

Table II.A Observation of doctors in diarrhoea case management.

	Total n=57		Trained n=25		Untrained n-32		P value
	No.	(%)	No.	(%)	No.	(%)	
History							
No. of diarrhoea days	56	(98.2)	24	(96.0)	32	(100)	n.s.
No. of stools/day	53	(93.0)	23	(92.0)	30	(93.7)	n.s.
Blood in stools	38	(66.6)	17	(68)	21	(65.6)	n.s.
Vomiting	44	(77.2)	20	(80.0)	24	(75.0)	n.s.
Urine in last 6 hours	12	(21.05)	8	(32.0)	4	(12.5)	n.s.
Examination							
Weight	32	(56.1)	15	(60.0)	17	(53.1)	n.s.
Skin turgor	53	(93.0)	22	(88.0)	31	(96.9)	n.s.
Eyes	55	(96.5)	24	(96.0)	31	(96.0)	n.s.
Fontanelle	44	(77.2)	22	(88.0)	23	(71.9)	n.s.
Mangement							
ORT at facility	39	(68.4)	19	(76.0)	20	(62.5)	n.s.
ORS packets given for home	55	(96.5)	23	(92.0)	32	(100)	n.s.
ORS prepared infront of mother	30	(52.63)	12	(48)	18	(56.25)	n.s.
Breast feeding contd.	53	(93.0)	24	(96.0)	2	9 (90.6)	n.s.
Antibiotics	17	(29.8)	4	(16.0)	13	(40.6)	0.043
Antidiarrhoeals	8	(14.03)	2	(8.0)	6	(18.7)	n.s.
Antiemetics	18	(31.6)	6	(24.0)	12	(37.5)	n.s.

Table II. A shows a comparision of results between two groups. In histoiy taking, it was noted that the trained doctors questioned more frequently on the passage of urine (32% against 12%).
In examining, the babies weight was recorded by 60 percent trained and 53 percent untrained doctors. The parameters for management showed that 96 percent of doctors provided ORS packets for home use, but only 53 percent actually demonstrated the preparation technique to the mothers. Antibiotics were prescribed less frequently by the trained doctors.

Table II-B. Observation of doctors practices in diarrhoea case management.

	Total n=57		Trained n=25		Untrained n=32		P. Value
	No.	(%)	No.	(%)	No.	(%)	
Doctors advice							
Mixing of ORS	47	(82.5)	22	(88)	25	(78.1)	n.s.
Administration of ORS	34	(59.6)	19	(76)	15	(46.9)	0.026
Breast feeding	35	(61.4)	17	(68)	18	(56.2)	n.s.
Dangers of bottle feed	15	(26.3)	9	(36)	6	(18.75)	n.s.
Feeding/Nutrition	24	(78.9)	21	(84)	24	(75)	n.s.
Hand washing	27	(47.3)	17	(68)	10	(31.2)	n.s.
Immunization	10	(17.5)	8	(32)	2	(6.2)	.011
Signs of dehydration/ when to bring back	7	(12.3)	4	(10)	3	(9.4)	n.s.
Parents evaluation on the advice by doctors							
ORS preparation	15	(26.3)	10	(40)	5	(15.6)	0.038
Use of ORS	5	(8.8)	3	(12.0)	2	(6.2)	n.s.
Feeding/Nutrition	3	(5.3)	2	(8)	1	(3.1)	n.s.
Hand washing	2	(3.5)	2	(8)	0	(0)	n.s.
Signs of dehydration/ when to bring back	7	(12.3)	4	(10)	3	(9.4)	n.s.

Table Il-B shows the advice given by the doctors to the mothers. It was observed that hand washing was stressed more frequently by the trained doctors (68%) compared to the untrained ones (31%). None of the doctors though washed hands in front of the patients. Evaluation of the parents of the patients was a part of the doctors task which was also assessed. Preparing the ORS feed was questioned more by the trained personnel.

Table III. Assessment of knowledge of doctors in diarrhoeal diseases.

	Total n-69		Trained n=30		Untrained n=39		P. value
	No.	(%)	No.	(%)	No.	(%)	
Dehydration							
Signs of dehydration	67	(97.1)	30	100)	37	(94.9)	n.s.
Assessment of dehydration	53	(76.8)	26	(86.6)	27	(69.2)	n.s.
Assessment of compl.	64	(92.7)	27	(90)	37	(94.9)	n.s.
Oral rehydration							
Composition of ORS	58	(84.0)	28	(93.3)	30	(76.9)	n.s.
Amount of ORS	22	(31.9)	11	(36.6)	11	(28.2)	n.s.
Correct use of ORS	18	(26.0)	9	(30.0)	9	(26.0)	n.s.
Administration of ORS	57	(82.6)	27	(90.0)	30	(76.9)	n.s.
Feeding/Nutrition							
Cont. feeding in diarrhoea cases	40	(57.9)	17	(56.7)	23	(58.9)	n.s.
Nutritional assessment	25	(36.2)	13	(43.3)	12	(30.8)	n.s.
Nutritional advice	11	(15.9)	6	(20.0)	5	(12.8)	n.s.
Vit A	50	(72.4)	25	(83.3)	25	(64.1)	n.s.
Drugs							
Use of antidiarrhoeals	25	(36.2)	15	(50.0)	10	(25.6)	0.036
Use of antibiotics	24	(34.7)	14	(46.7)	10	(25.6)	n.s.
Dose of drugs	24	(34.7)	11	(36.7)	13	(33.3)	n.s.

Table III gives the results of the knowledge of the doctors on diarrhoea management which was conducted via a questionnaire. All the doctors present at the given time (total 69) (30 trained and 39 untrained) were included in the assessment. Use of anti-diarrhoeals was known by 36 percent and that of antibiotics with doses by 35% doctors only. It was conchided that despite the adequate knowledge on dehydration, the assessment was not comparable. The results of the assessment of paramedics can be seen in

Table IV. Observation of paramedical staff in assessment and management of diarrhoea cases at the health facilities evaluated.

	Frequency n=60	Percentage (%)
History		
No. of diarrhoea days	59	98.3
No. of stools	52	86.7
Blood in stool	15	25.0
Vomiting	21	35.0
Urine in 6 hours	14	23.3
Examination		
Weight	18	30.0
Skin turgor	53	88.3
Eyes	53	88.3
Fontanelle	53	88.3
Management		
ORT at facility	39	65.0
ORS packets given for home	57	95.0
ORS prepared in front of mother	33	55.0
Breast feeding cont.	55	91.7
Advice		
Mixing ORS	49	81.7
Use of ORS	31	51.7
Breast feeding	33	55.0
Dangers of bottle feeding	12	20.0
Feeding/Nutrition	45	75.0
Hand washing	33	55.0
Immunization	6	10.0

Table IV Urine output was questioned by 23% and weight recorded by 30% subjects only. It was encouraging to note that the necessary examination of the babies was carried out by 88% paramedics and ORS supplied by 95% though the practical demonstration was done by 55% only. Again, breast feeding advantages were stressed by 55% but the dangers of bottle feeding explained by 20% individuals only.Immunization was the poorest aspect.

Discussion

The objective of the study was to evaluate the effectiveness of the training provided to the doctors for management of diarrhoea cases. This would necessitate a functioning ORT corner with doctors and paramedics. No prior notification or information of the visit of the survey team was given to the facility which meant that status of ORT and record keeping could not have been altered. However, case management could have been influenced to some extent, especially prescribing practices. The presence of doctors in nearly all the facilities was a very encouraging sign, though a significant number had untrained ones which was not surprising as doctors are frequently transferred in the health department. The paramedical staff though present at most units had received no formal training. ORT units were present in most facilities. Record keeping was not proper and under-utilization of the weighing scale was disappointing as weight is an important parameter in the management of diarrhoea. Soap and water was lacking in most facilities and the staff did not demonstrate this aspect of personal hygiene to the relatives of the patients, which is again important. The credit of a regular supply of ORS packets goes to the DHOS.

The difference in history taking between the trained and untrained doctors was observed in enquiring about the urine output by the former group. This confirmed the suggestion by Patwari from India[5] that the training for doctors should be practical and applied. The wide use of ORT is also comparable with the results of a study from India[6]. Providing ORS packets for home use to nearly all patients may have been due to the increasing awareness. Non-reliance on drugs was evident by the less use of antibiotics and antidiarrhoeals, particularly b the trained group which has also been reported from India[6]. It was observed that the advice provided to parents on preventive aspects was far from satisfactory. Both groups of doctors were more oriented and trained for treatment rather than prevention of disease. "Hands on training", should be given priority in the management and control of diarrhoeal diseases[7] . The trained doctors had inadequate knowledge on aspects as drug doses, nutritional advice, dangers of bottle feeding and the correct use of ORS. This was attributed to the time lapse between DTU training and evaluation Continuing medical education programmes are, therefore, necessary as emphasized by other workers[8].

Assessment of paramedics gave similar results as of the doctors. This proved that doctors were the trend setters. Parameters of weight recording and practical demonstration of ORS preparation were far from satisfactory. The paramedics are basically trained to provide health education to the parents with more emphasis on preventive aspects. Simple messages on use of ORS, breast feeding, dangers of bottle feeding. nutrition, hand washing and immunization should be disseminated by them and for which they should be trained.

These recommendations have been made for diarrhoeal disease control programmes earlier[9,10].

It was concluded from the study that a periodic evaluation of the doctors working in DTUS should be conducted besides providing them with regular refresher courses. Record keeping should be simple so that it can be correctly maintained. The DHO should provide regular supervision for the benefit of the medical and paramedical staff. Ongoing awareness campaigns should be practiced through the health workers and the media.

Acknowledgements

Financial support for this research project was provided by the Applied Diarrhoeal Disease Research Project at Harvard University by means of co-operative agreement with the U.S. Agency for International Development. The help given by Dr. Jamal Raza is also acknowledged.

References

1. World Health Organization, A manual for the treatment of diarrhoea. CDD Programme for the control ofDiarrhoea diseases. WHO/CDD/SER/90, 1990,2 Rev. 2,p.1.
2. Synder, J.D. and Merson, M.H. The magnitude of the global problem of acute diarrhoeal disease: A review of active surveillance data. Bull. WHO. 1982;60:605-13.
3. Khan, R.Q. Report on diarrhoea training units activities March, 1989 to September, 1991 submitted by field operation coordinator of Pakistan Islamabad. Child survival project, 1991, p.2.
4. EPI/CDD - Pak. International immunization coverage evaluation and disease survey, 1987, page 2.
5. Patwan, AK. Cost effective strategy for promotion of appropriate case management of diarrhoeal diseases establishment of D.T.U. Indian J. Pediatr., 1991 ;58:6:783-7.
6. Patwari, A.K.,Kumar,H.,Anand. V,K. etal. Diarrhoca training and treaInsent unit: Experience from a teaching hospital. Indian J. Paediatr., 1991 ;58:(6): 775-81.
7. Patwari. A.K., Anand, V, Kumar, H. et al. Knowledge and perceptions of residents regarding case management of acute diarrhoea. Indian J. Paediatr., 1991 ;28:8,887-92.
8. Singh. T. Inadequacies in the management of diarrhoea at a peripheral non-teaching level. Indian J. Paediatr., 1990;57:1, 89-92.
9. Ketsela, T., Asfaw, M. and Belachew, C. Knowledge and practices of mothers, care takers towards diarrhoea and its treatment in rural communities in Ethopia. Ethop. Med. 3., 1991;29:4. 213.24,
10. Lee, W., Stoeckel, J., Jintagonont, P. et al. The impact of a community based health education program on the incidence of diarrhoeal disease in southern Thailand, South East Asia. J Trop.Med. Public Health, 1991:22(4) 548-66.