Does Training Affect Quality of Diarrhoea Case Management

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Abstract

Improvement in diarrhoea case management through training of health care providers in the govenunent and the private sector was the key element of diarrhoea policy in Pakistan in 1989. Numerous training sessions were organized by the Child Survival project. The aim of this project was to look at the effect of training on quality of diarrhoea case management at the oral rehydration therapy (ORT) corners and diarrhoea treatment units (DTUs) of Sindh. A systematic random sample of 62 ORT corners and DTUs in Sindh was assessed using the WHO drafted Health Facility Surveymanual. Itwas observed that the trained health providers were better in taking history for blood in stools (P<0.004) and other illnesses (p<0.000). For assessment of dehydration, no significant difference (p<0.933), was found between trained and untrained health providers. Trained were better than untrained (p

Introduction

Diarrhoea has been one of the major killer of Pakistani children under 1 and 5 years for more than a decade[1]. It is the single largest contributor of malnutrition in Pakistan[2]. According to the National Health Survey[3], 25.8% are under-weight with 10.6%wasted and 22.9% stunted. In 1996 prevalence of diarrhoea was 42.8% and only 20.8% mothers had used ORS[4]. It is apparent that even after an elaborate Primary health care system through Basic Health Units, Rural Health Centers etc., we have not been able to decrease diarrhoea morbidity in children[5]. The reasons identified included lack of training at the undergraduate level and recommendations included training of all health care providers. A practicing physician needs to update his knowledge and skills by refreshing himself for appropriate clinical performance[6]. Various methods have been used for improving the skills of health care providers in an attempt to improve quality of care[7]. Pakistan fonnulated its National policy on diarrhoea case management in 1988-89, which identified[8] improved case management to be the primary strategy for decreasing diarrhoeal mortality. The progranune focussed on improving case management in major health facilities and training with continuing medical education to health care providers being the key element of the diarrhoea policy. The purpose of continuing medical education is to improve quality of care and one would expect better performance of trained health care providers compared to untrained[9]. A national evaluation of the quality of case managementwas done in 1991 to assess the effect of diarrhoea policy on quality of case management10 at Oral Rehydration Therapy corners (ORT) and Diarrhoea Training Units (DTU) in the country. This survey recommended further training and after that numerous trainings were arranged by Control of Diarrhoeal Disease Programme, (3ovenunent of Sindh. The aim of this project was to look at the effect of training on quality of care for diarrhoea case management of children at the ORT corners and DTU's of Sindh. The study was done in collaboration with the "Control of Diarrhoeal Diseases Programme, Government of Sindh" and "UNICEF Karachi, Pakistan".

Material and Methods

This is an operations research project and strategy is based on the guidelines suggested in the Health Facility Survey Manual of WHO drafted by the diarrhoeal disease control (CDD) programme, in April, 1993. This approach facilitated in improvingdiarrhoea case management astriedin Mozambique".

Following the guidelines of the manual, first Health care workers were observed while managing a diarrhoeal child, for the quality of case management. Then the child was examined by the surveyors for sign of dehydration and mother interviewed for knowledge regarding management of child at home. The observation for managing children at the facility with some and severe dehydration was done for 2 hours. The questionnaires for observation,
assessment, interview of mother and health worker were taken from the WHO manual and used after pilot testing at Lyari General Hospital, Karachi. The team included 9 surveyors with a background in health and college education and three supervisors who were medical doctor3. The team was trained at the diarrhoea training unit of Civil Hospital, Karachi under supervision of Dr. A. G. Billoo. After "District-wise" Urban and Rural stratification, a systematic random sample of 64 centers was drawn. Only 62 centers could be surveyed and 152 case managements were assessed. Data was entered on EPI Info. version 5, and analyzed on the same. Our indicators included[1]: Training - participation in integrated child survival training course on case management of diarrhoea in the previous three years.
History - Asking for duration of diarrhoea.
-blood instools and other illnesses.
Management - Plan A fora child with no dehydration. Plan B fora child with some dehydration.
- Plan C for severely dehydrated children.
Advice - Explaining to mother 3 rules of home case management and - preparation of ORS.

Results

Out of the total 152 cases, 68 (44.7%) were managed by trained and 84(55.3%) by untrained staff. Doctors managed 138 cases in contrast to 14 managed by lady health visitors (LHV). The cases included children under 12 years of age.
There was, a significant difference in history taking for other illnesses and blood in stools between trained and untrained health workers (Table 1).

Table I. History taking for management of diarrhoea by training status of health personnel.

Training status History taking for diarrhoea	History not taken		History taken		P value.
	TR*	UNTR**	TR	UNTR	
Duration of diarrhoea	08 11.8%	08 09.5%	60 88.2%	76 90.5 %	0.871
Blood in stools	31 45.6%	50 59.5%	37 54.5%	34 40.5 %	0.004
Other illnesses	20 29.4%	43 51.2%	48 70.6%	41 48.8 %	0.000

*TR - Trained
**UNTR- Untrained

For correct assessment of dehydrationaccordingto WHO standards,a minimum of 8 out of 12 signs should be looked for and/or examined for signs of dehydration. It was found that 89.5% (n=98) were

correctly assessed by health providers which included 89.7% by the trained and 89.3% by the untrained workers ($p<0.933$).

Significant difference between trained and untrained health providers was found for weighing the child ($p=0.0000$) and referring to growth chart (0.0007) for nutritional assessment (Figure).

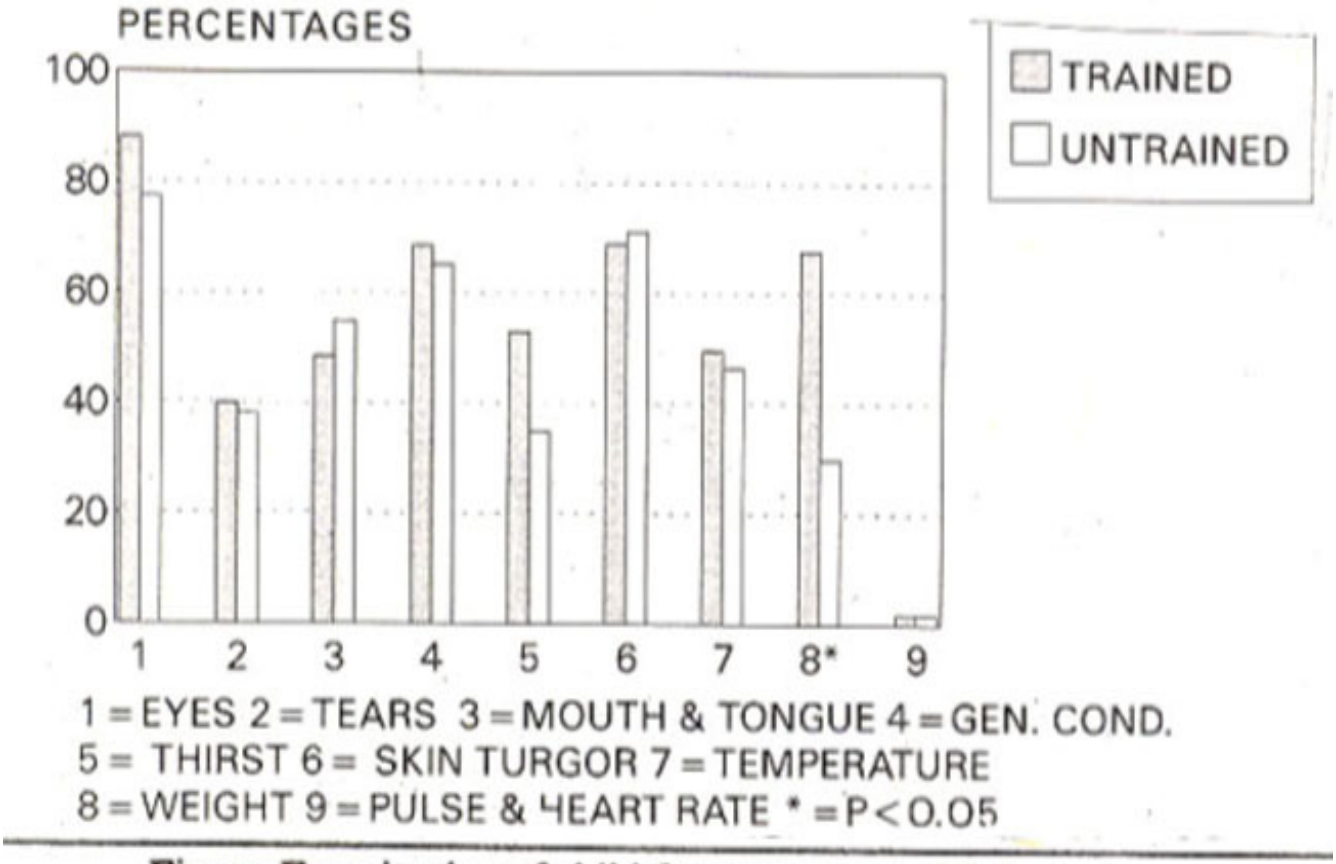

Figure. Examination of child for assessment of dehydration.

Overall correct treatment plan was followed for 125 cases out of 152 cases (Table II).

Table II. Cases managed by health workers according to the "A" "B", "C" plan for diarrhoea as defined by World Health Organization[1].

Degree of dehydrations assessed by health worker	Correct treatment		Incorrect treatment		P value*
	No.	%	No.	%	
No dehydration N=118**	95	80.5	1	0.84	0.035
Trained N=52	47	90.4	1		
Untrained N=66	48	72.7			
Some dehydration N=32***	12	37.5	15	46.8	0.783
Trained N=15	6	40.0	7		
Untrained N=17	6	35.3	8		
Severe dehydration N=2	1	50.0	1	50.0	0.50
Trained N=1	1	100	0		
Untrained N=1			1		

*P value is for correct treatment given by trained versus untrained health workers.

** Only 96 cases were given any treatment.

*** Only 27 cases were given any treatment, the rest were sent home without any treatment.

However, significant difference (p) between trained and untrained was found for treatment as is recommended in "Plan A" (WHO recommended). For management of children put on Plan "B" and "C" two hour follow-up revealed that, trained health providers were significantly better than untrained for correct rehydration ($p<0.004$) of child. The trained health providers were also more aware ($p<0.004$) of following Plan A after rehydration.

According to the WHO, CDD indicators, the caretakers should be given clear instructions regarding home case management of diarrhoea and check if the mother has understood the three rules of home case management. There were a total of 118 cases with no dehydration and should have been advised about the three rules of home case management, but it was noted that only 78 (66%) were given instructions.

Seventeencases (53%) ofsome dehydration (n=32) and 1 case of severe dehydration given ORS at the facility were also advised on home case management More trained than untrained health providers ($p<0.0006$) were offering advise about home case management. However, when we looked at the

content of advice table III)

Table III. Correct advise given to mothers/caretakers regarding home case management of diarrhoea.

Rules of home case management N=96	Correct advice		Incorrect advice		Correct Advice % P value
	TR n=53	UN n=43	TR n=53	UN n=43	
Continue feeding	49	39	4		91.7%
	92.5%	90.7%	7.5%	9.3%	0.519*
Give increased	47	39	6	4	89.6%
Fluids	88.7%	90.7%	11.3%	9.3%	0.509*
Knowledge of 3/7	27	14	26	29	42.7%
Danger signs	50.9%	32.6%	40.1%	67.4%	0.070**
Correct advice	26	14	27	29	41.7%
(All 3 correct)	49.1%	32.6%	50.9%	67.4%	0.102**

*Fisher's exact test
** Chi square test.

there was no significant difference between trained and untrained ($p<0.10$) health workers. A total of 121(79.6%) cases out of 152, were put on PlanAandonly 72 (59.5%) were given advise regarding ORS. ORS was prescribed in 69 cases (57%) and Recommended Home Fluid in3 cases (2.5%) whereas, the rest were sent home with either a prescription ora packet of ORS with no advice.
There was no significant difference between trained and untrained health pmviders for giving correct advice to the mother for preparation of ORS at home (Table IV).

Table IV. Difference between trained and untrained workers for giving correct instructions to mothers or caretakers regarding preparation of ORS.

Instructions (INS) given N=72	Correct INS		Incorrect INS		P value
	TR N=41	UN N=31	TR N=41	UN N=31	
Explain that ORS replaces fluid loss	26	20	15	11	0.923
Explain how much ORS is to be given and when	35	22	06	09	0.136
Give instructions on preparation of ORS	37	25	04	06	0.243
Demonstrate ORS preparation	06	01	35	30	0.105
Check to see if mother or caretaker has understood	23	18	18	13	0.867
Correct instructions given: Atleast 3/5 are correct	30	21	11	10	0.615

Discussion

Assessment of quality of case managementbegins from histoiy taking as it is the most crucial element in management of any disease. It was found that there was a significant difference between trained and untrained health workers in asking about blood in stools and other illnesses. However, in the overall picture, more emphasis was on taking history for duration of diarrhoea. This means that a case of chronic diarrhoea had little chance of being missed during management by trained or untrained health workers. Trained health workers were also more conscious of other illnesses compared to the untrained workers. In the examination of the child for dehydration it was found that almost 90% of the health workers at ORT corners were correctly examining the child. The only difference between trained and untrained was forweighingthe child (P=0.000) and mferringtogrowthchart (P=0.000) for nuiritional assessment of the child. This is a positive finding for correct assessment of diarrhoea cases but it raises an important issue of improving the training programme. The major problem was identified in the treatment of diarrhoea cases according to the "ABC plan" recommended by WHO for diarrhoea case management. Although 89% of the cases were correctly assessed for dehydration but unfortunately only 71% were given correct treatment by the health workers. Trained were significantly better than

untrained (P=0.001) for ordering the treatment plan. This is a major improvement as compared to the 1991 survey conducted by the CDD programme of Paldstan where only 16% of the cases were correctly assessed and 41% given correct treatment. The majority of correct advice was givenby trained (65%) compared to the untrained (35%) health workers. Although this relationship was not significant (P=0. 10), it does emphasize the importance offurthertmining to the untrained health workers. The quality of this advice has not improved much since the 1991 survey where 24% of the mothers were correctly advised on home case management Similar results were obtained for advising mothers on preparation and use of ORS at home. This has changed since 1991 when 90% of the mothers were advised about ORS preparation but correct advice was given to only 7% of the mothers. In conclusion, one could say that diagnosis was good as majority of the cases were correctly assessed but the treatment was poorirrespective of the training status. Training had improved the quality of assessment of cases and a case of bloody diarrhoea and other illnesses had very little chance of being missed by the trained health worker. Advice given to mothers onthEee niles of hothe case management and ORS use was deficient in major areas. The health education component in case management was not given due importance.

Suggestions

All the health workers presently involved in managing diarrhoea cases should be trained at the earliest possible time. The supervisors of all ORT corners should be, trained in diarrhoea case management besides supervisory skills and techniques of monitoring. The strategies of diarrhoea case management should be part of the undergraduate curneulum in medical, nursing and allied specialities. As training onjob can improve onthe previous knowledgebutif the skills are not taught earlier then the impact of on the job training is also delayed. Inourcountiy diarrhoea is one of the majorkillers of under 5 children therefore we cannot delay the changes in undergraduate curriculum.

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