ORIGINAL ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
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www.njcmindia.org

Sustained Effect of Behavioural Change Communication among Mothers of Children with Diarrhoea

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Financial Support: None declared
Conflict of Interest: None declared

How to cite this article:
Palkar SH, Pore PD, Pawar SR, Ghate MM. Sustained Effect of Behavioural Change Communication among Mothers of Children with Diarrhoea. Natl J ComunityMedicine 2018; 9(2):91-95

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Date of Submission: 22-05-17
Date of Acceptance: 03-02-18
Date of Publication: 28-02-18

ABSTRACT

Introduction: Mothers' knowledge, attitudes and practices (KAP) regarding diarrhoea and its management are important for home based management of children. Behavioural change communication (BCC) activities are known to modify the KAP however the effect needs to be sustained. Hence this study, to evaluate sustained effect of BCC on KAP of mothers/caretakers regarding diarrhoea in hospitalized children was planned.

Methods: In this prospective study, mothers/caretakers of children hospitalized with diarrhoea were interviewed using a questionnaire. BCC activity was conducted using a pretested structured tool. Effect of BCC was assessed at discharge and at six months after the activity.

Results: Of the total 130 children included over a year, 60 out of 78 patients admitted in first six months could be followed at home. Significant improvement in knowledge of definition & cause of diarrhoea, dehydration and signs of dehydration, due to BCC activity was noted at discharge which was sustained at six months. Awareness about danger signs, ORS and homemade fluids also improved from baseline to discharge and at 6 months.

Conclusion: BCC activity for mothers results in improvement in knowledge which may improve outcomes of diarrhoea in children; hence it should be an integral part of diarrhoea management in children.

Key words: Children, mother, diarrhoea, behavioural change communication

INTRODUCTION

Diarrhoea is one of the most important health concerns largely contributed by unsafe water supply, sanitation and hygiene.[1] About half of the under five deaths from the world occur in India.[2] In India, acute diarrhoeal diseases account for about 8% of the deaths in this age group.[3] Dehydration can be life threatening particularly in infants, young children, malnourished patients and people with impaired immunity. Simple measures like use of oral rehydration solution (ORS) and continuation of other feeds can prevent dehydration in most cases. Indian studies which examined morbidity, aetiology and risk factors for dehydration are mainly conducted in children under five years of age.[4-6] There are limited data on diarrhoea related morbidity in children above five years. Hospitalization and deaths can be prevented if dehydration is picked up early and treated promptly. Health education can improve knowledge of mothers/caretaker and help in reducing diarrheal episodes and complications in children. The impact of health education may vary with the passage of time[7] and the knowledge gained may not be retained after few months. So present study was planned to evaluate sustained effect of behavioural change communication (BCC) activity on mothers

of children of all paediatric age group admitted with diarrhoea.

OBJECTIVE

The study was conducted to evaluate the sustained effect of behavioural change communication on knowledge, attitude and practice of mother/caretakers regarding diarrhoea in hospitalized children.

MATERIAL AND METHODS

A prospective study was conducted among children hospitalized with the complaint of diarrhoea in a paediatric ward of a tertiary care hospital, Pune after Ethics Committee approval. Study included all paediatric patients admitted with complaint of diarrhoea for one complete year i.e. from October 2011 to September 2012. Written informed consent of the mother/caretaker was obtained. After clinical history, mothers/caretakers were interviewed regarding knowledge, attitude and practices regarding diarrhoea in children using a predesigned, pretested valid questionnaire (Pre Test). BCC activity was conducted using the tool which contained pictorial messages. All the points were explained to them and their queries were resolved. This BCC tool was prepared in local language Marathi using ASHA training module[8,9]. The tool included definition and causes of diarrhoea, signs of dehydration, management of diarrhoea at home and prevention of diarrhoea etc.

On the day of discharge, children were assessed for the outcome and mothers/ caretakers were interviewed for assessing effect of BCC activity (Post Test 1). A home visit was conducted for patients recruited in the first six months of the study to assess the sustained effect at 6 (+1) months after the BCC activity (Post Test 2).

Statistical analysis

Qualitative data are presented as frequencies and percentages whereas quantitative data are presented as mean and standard deviations. For assessing the improvement in knowledge after BCC activity, McNemar Test and Wilcoxon test were used for qualitative and quantitative data respectively. The data was analysed using SPSS version 16.0. P value < 0.05 is considered as statistically significant.

RESULTS

A total of 130 children were included in the study of which 80 were male and 50 were female. Mothers of all these children participated in the study. A total of 128 patients were followed up on the day of discharge (2 discharges against advice at night) whereas 60 out of 78 patients admitted in first six months were successfully followed during home visit.

Of 130 mothers, 7 (6.9%) mothers were illiterate whereas 37 (28.5%) mothers had obtained secondary school certificate. Mothers of 17 (13.1%) children were working while 113 (86.9%) mothers were homemakers. A total of 56 (43.1%) patients were from class III socio-economic status as per modified BG Prasad classification whereas 30 (23.1%) were from class IV. Class I and class II status were 21 (16.1%) and 20 (15.4%) respectively.

Table 1: Age group wise distribution of patients

Age group	Number (%)
0-6 months	21 (16.15)
7-12 months	60 (46.15)
13-24 months	29 (22.31)
25-60 months	12 (9.23)
>60 months	8 (6.2)
Total	130 (100)

Table 2: Sustained effect of BCC activity on mothers' knowledge and attitudes about diarrhoea, dehydration and its management

Knowledge contents	Baseline(n=130)	At the time of discharge(n=128)		After six months(n=60)	
	Correct (%)	Correct (%)	p value*	Correct (%)	p value*
Diarrhoea definition	100 (76.9)	120 (93.8)	<0.001	55 (91.6)	< 0.001
Causes of diarrhoea	68 (52.3)	98 (76.6)	<0.001	45 (75.0)	< 0.001
Knowledge of dehydration	111 (85.4)	127 (99.2)	<0.001	60 (100)	< 0.001
Knowledge that dehydration endangers life	114 (87.7%)	128 (100%)	-	60 (100)	-
Knowledge of ORS	99 (76.2)	127 (99.2)	<0.001	60 (100)	< 0.001
Knowledge of ORS preparation	96 (73.8)	124 (96.9)	<0.001	54 (90.0)	<0.001
Knowledge of Home Made Fluid	107 (82.3)	127 (99.2)	<0.001	60 (100)	<0.001
Attitude about Continuation of feeding during diarrhoea	120 (92.3)	122 (95.3)	0.424	57 (95.0)	0.4
Attitude about Continuation of breast feeding during diarrhoea	123 (94.62)	128 (100)	-	59 (98.3)	-

*McNemar test was used

Table 3: Knowledge of mothers regarding dehydration signs, danger signs of diarrhoea and Home Made Fluids

Knowledge of mothers	Baseline (n=130)	At time of discharge (n=128)	After six months (n=60)
No. of dehydration signs			
0	19 (14.6)	1 (0.8)	0 (0)
1	36 (27.7)	4 (3.1)	2 (3.3)
2	44 (33.8)	35 (27.3)	18 (30.0)
3	27 (20.8)	39 (30.5)	27 (45.0)
4	4 (3.1)	35 (27.3)	8 (13.3)
5	0 (0)	13 (10.2)	5 (8.3)
6	0 (0)	1 (0.8)	0 (0)
No. of danger signs			
0	36 (27.7)	0 (0)	0 (0)
1	76 (58.5)	37 (28.9)	26 (43.3)
2	15 (11.5)	62 (48.4)	25 (41.7)
3	3 (2.3)	26 (20.3)	8 (13.3)
4	0 (0)	3 (2.4)	1 (1.7)
No. of Home Made Fluids			
0	23 (17.7)	1 (0.8)	0 (0)
1	34 (26.2)	6 (4.7)	5 (8.3)
2	41 (31.5)	24 (18.8)	14 (23.3)
3	23 (17.7)	40 (31.2)	17 (28.3)
4	7 (5.4)	27 (21.1)	17 (28.3)
5	2 (1.5)	19 (14.8)	6 (10.0)
6	0 (0)	9 (7.0)	1 (1.7)
7	0 (0)	2 (1.6)	0 (0)

Figure in parenthesis indicate percentage

The age group wise distribution of patients is given in table 1. Minimum age of child was 2 months and maximum age was 14 years with median age 10 years. After BCC activity, significant improvement in the knowledge of definition, reason of diarrhoea, about dehydration, ORS, its correct method of preparation and Home Made Fluids (HMF) was noted at the time of discharge which was sustained even after six months (table 2, all $p<0.001$).

The dehydration signs told by the mothers were sunken eyes, irritability, thirsty, drinking poorly, lethargic, weakness, not passing urine for a long time, depressed fontanel etc. The mean number of signs of dehydration known to mothers increased from 1.7 ± 1.05 at baseline to 3.14 ± 1.10 at the time of discharge and dropped down to 2.93 ± 0.95 at six months. The improvement in understanding of overall signs of dehydration was significant at the time of discharge and after six months (table 3, $p<0.01$).

The danger signs told by the mothers were lethargy, weakness, feeding poorly, blood in stool, deeply sunken eyes, too many loose motions etc. The mean number of danger signs identified by mothers improved from 0.88 ± 0.69 at baseline to 1.96 ± 0.77 at the time of discharge and 1.73 ± 0.76 at six months. The effect of BCC activity was statistically significant (table 3, time of discharge $p=0.01$, six months $p<0.01$).

The mean number of HMF known to the mothers at base line improved from 1.72 ± 1.20 at baseline to 3.48 ± 1.39 on the day of discharge ($p<0.01$) and 3.13 ± 1.19 after six months (table 3, $p<0.01$).

A total of 124 (95.4%) mothers had knowledge of washing hands with soap and water after visiting toilet. All 128 (100%) had this knowledge at the time of discharge. Of the 60 mothers, 58 (96.7%) retained it after 6 months.

At baseline, 123/130 mothers (94.6%) were washing their hands with soap and water after visiting toilet, 115/127 mothers (90.6%) were washing hands after cleaning the defecated child and 72/110 mothers (65.5%) were washing hands before feeding the child. After 6 months, 58/60 (96.7%) practiced hand washing with soap and water after visiting toilet ($p = 1.0$). Of 58 mothers who were feeding their children, 46 (79.3%) were washing their hands before feeding the child ($p = 0.021$).

DISCUSSION

We evaluated the effect of BCC activity on knowledge, attitude and practices of mothers/caretakers regarding diarrhoea in children admitted in a private tertiary care teaching hospital, at the time of discharge and even after 6 months.

Maximum numbers of children hospitalized due to diarrhoea were under two years of age in present study which is similar to a study conducted by Srivastava et al.[10].

Awareness about correct definition of diarrhoea was better than other Indian studies[7,11] possibly because of less number of illiterate mothers in our study. Similar to others,[7,12] we also found significant improvement in the knowledge regarding definition of diarrhoea after BCC activity. Limited awareness about diarrhoea leading to dehydration[11] highlights the need of health education. Significant improvement was seen in the knowledge of causes of diarrhoea and regarding dehydration among mothers. Our observations are in accordance with another study[13] which performed assessment after six weeks of health education. Another study[12] showed significant improvement in the knowledge regarding danger of diarrhoea assessed after three months of health education.

Compared to a study conducted by others,[11] less number of mothers were aware of ORS at baseline. Other studies[7,14] from India reported knowledge about ORS among 46.5%-68.1% mothers. BCC activities play a significant role in this regards. After BBC activity, we observed significant improvement in the number of mother knowing about ORS and its preparation and HMFs.

We observed more awareness about signs of dehydration among mothers compared to another study.[11] The percentage of mothers who could not tell any sign of dehydration (14.6%) is consistent with another study[15] but percentage of mothers who could identify ≥2 signs of dehydration was more in our study. Consistent with a study,[13] we observed significant improvement in the knowledge of mothers regarding number of signs of dehydration after BCC activity**.** We observed improved knowledge after BCC activity which was retained even after six months. Another study,[7] reported drop in knowledge after two years which suggests the need for consistent health education.

Number of mothers who could not tell any danger sign and identify at least two danger signs was lesser than other study[16] conducted in a Delhi slum. Our findings regarding awareness of ≥1danger sign by mother are similar to findings reported by Shah et al.[14]

Previous studies observed less common practice of hand washing before handling food, eating or feeding a child compared to hand washing after visiting toilet.[17-19] Similarly, washing hands before feeding the child was less in the present study which improved after BCC activity. Washing hands before eating or feeding child though advised commonly, is not practiced routinely. There is a significant scope for improvement in this regard among Indian mothers.

Overall, our observations highlight requirement of health education/ BCC activities among mothers of children suffering from or at risk of diarrhoea. Although the knowledge was retained by most of the mothers after six months, there is a possibility of losing the gained information over the period of time which was shown by Mangala et al.[7] So consistent efforts are needed where health education/ BCC activities should be repeated at least 6 monthly especially in the local language so that they can understand it better and retain it.

The study has some limitations. The patient population included in the study was hospitalized patients limited only to one tertiary care hospital limiting the applicability of results to the general community. Moreover, all patients enrolled in the first six months of the study could not be interviewed after six months of discharge due to logistic reasons.

CONCLUSION

Behavioural Change Communication activities are beneficial and have sustained effect on the mother's knowledge regarding diarrhoea and dehydration at least for 6 months. BCC activities conducted in local language about use of ORS and home-available fluids, continuation of feeding and breast feeding if applicable and identification of signs of dehydration and danger signs should be included as an integral part of diarrhoea management in children and given repeatedly for the better retainment of knowledge.

REFERENCES

1. Burden of disease and cost effectiveness estimates. Available at http://www.who.int/water_sanitation_health/diseases/burden/en/. [Last accessed on October 25, 2013]
2. Levels and trends in child mortality: estimates developed by the UN Inter-agency group for child mortality estimation. UNICEF, New York; 2012.
3. Government of India, National Health Profile 2011 (Jan-Dec), DGHS, Central Bureau of Health Intelligence, Ministry of Health and Family Welfare, New Delhi; 2011.
4. Zodpey SP, Deshpande SG, Ughade AN, Hinge AV, Shrikhande SN. Risk factors for development of dehydration in children aged under five who have acute watery diarrhoea: a case control study. Public Health 1998; 112: 233-36.
5. Patel AB, Ovung R, Badhoniya NB, Dibley MJ. Risk Factors for Predicting Diarrhoeal Duration and Morbidity in children with Acute Diarrhoea. Indian Journal of Pediatrics 2012; 79: 472-77.
6. Borade A, Bias AS, Bapat V, Dhongade R. Characteristics of Rotavirus Gastroenteritis in Hospitalized Children in Pune. Indian Journal of Medical Sciences 2010; 64: 210-18.
7. Mangala S, Gopinath D, Naarsimhamurthy NS, Shivaram C. Impact of educational intervention on knowledge of mothers regarding home management of diarrhoea. Indian Journal of Pediatrics 2001; 68: 393-97.
8. ASHA Prashikshan Pustika Kramank 1. Sarvajanik Arogya Vibhag Maharashtra Shasan. Shaskeeya Photozinco Mudranalay May 2009.
9. ASHA Abhyaskram Pustika Kramank 2. Sarvajanik Arogya Vibhag Maharashtra Shasan. Shaskeey Photozinco Mudranalay.
10. Srivastava AK, Bhatnagar JK, Prasad BG et al. A clinical and aetiological study of diarrhoea in hospitalized children at Lucknow. Indian Journal of Medical Research 1973; 61: 596-601.
11. Dutta V, John R, Singh VP, Chaturvedi P. Maternal knowledge, attitudes and practices towards diarrhoea and oral rehydration therapy in rural Maharashtra. Indian Journal of Pediatrics 2001; 68: 1035-37.
12. Haroun HM, Mahfouz MS, El Mukhtar M, Salah A. Assessment of the effect of health education on mothers in al Maki area, Gezira state, to improve home care for under five children with diarrhoea. Journal of Family and Community Medicine 2010; 17: 141-146.
13. Bhattacharya R, Paramjit Kaur, Reddy DCS. Impact of education in the knowledge and practices of rural mothers and key family members on diarrhoea and its treatment at home. Journal of Diarrhoeal Disease Research 1988; 6: 15 -20
14. Shah MS, Ahmad A, Khalique N, Afzal S, Ansari MA, Khan Z. Home- based management of acute diarrhoeal disease in an urban slum of Aligarh, India. J Infect Dev Ctries 2012; 6: 137-42.

15. Mengistie B, Berhane Y, Worku A. Predictors of oral rehydration therapy use among under-five children with diarrhoea in Eastern Ethiopia: A community based case control study. Biomed Central Public Health 2012, 12: 1029.

16. Gupta N, Jain SK, Ratnesh, Chawla U, Hossain S, Venkatesh S. An evaluation of diarrhoeal diseases and acute respiratory infections control programmes in a Delhi Slum. Indian Journal of Pediatrics 2007 May; 74 (5): 471-76.

17. Lal P, Bansal AK, Aggarwal CS, Taneja DK, Gojia V. Incidence of diarrhoea and some related environmental and behavioural factors in Jhuggis of Delhi. Indian Journal of Public Health 1996; 40: 35-7.

18. Mbonye AK. Risk Factors for Diarrhoea and upper Respiratory Tract Infections among Children in a rural Area of Uganda. Journal of Health, Population and Nutrition 2004; 22: 52-58.

19. Luby SP, Agboatwalla M, Painter J, Altaf A, Billhimer WL, Hoekstra RM. Effect of intensive handwashing promotion on childhood diarrhoea in high – risk communities in Pakistan: A randomized controlled trial. Journal of American Medical Association June 2, 2004; 291: 2547 – 54.