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Child to Parent Education in Prevention of Acute Diarrheal Diseases in Rural Schoolunder Rural Health Training Centre

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ABSTRACT

Introduction: Many children in middle and low income country like India die before they reach their fifth birthday most among them during the first year of life. Mother is the primary caregiver for the child in almost all societies across the world. Hence the health practices along with knowledge and attitude of the mothers directly implies on the health of the child. The aim of the study is to find out the change in level of knowledge, attitude and practice of parents after receiving health education from their school going children.

Methodology: A pre structured & pretested questionnaires were used to assess the Knowledge, Attitude and Practice of children's at school & their mothers at home. The Pre and Post intervention scored are evaluated. Scoring system was developed & was compared among children's & their mothers.

Results: Both Children and mothers of study group showed significant increase in knowledge, attitude and practice as compared to control group.

Conclusion: An important determinant of child health is the knowledge of the Child's mother. Hence the health practices along with knowledge and attitude of the mothers directly implies on the health of the child.

Keywords: Acute Diarrhoeal Disease, Attitude Knowledge, Mothers, Practice

INTRODUCTION

Around 12 million children in middle and low income country like India die before they reach their fifth birthday, many during the first year of life.[1] Compared of all the childhood illnesses, acute diarrhoeal diseases, acute respiratory tract infections, and malnutrition are the most common causes of illness and death in the developing countries.[2]

Acute Diarrhoeal diseases are 2nd leading cause of child morbidity and mortality.[3] Acute Diarrhoeal disease continues to affect the developing world, causing more than 3 million deaths, and resulting for 17% of total under 5 mortality.[4]India ranks 1st for three quarters of death due to diarrhoea in under five population in the developing regions of the world.[5]

An important determinant of child health is the knowledge of the Child's mother.[6]Mother is the primary caregiver for the child in almost all societies across the world. Hence the health practices along with knowledge and attitude of the mothers directly implies on the health of the child. The morbidity due to diarrhoea can be easily and adequately managed at home. A simple health education to mothers on the aetiology, prevention and management of the diarrhoea has the potential to make families identify the danger signs of diarrhoea among children and seek treatment at the earliest. Health education forms a basic element of primary health care. The incidence of diarrhoeal disease in rural India is 12% and in urban India is 9%.[7] The aim of the study is to find out the change in level of knowledge, attitude and practice of parents after receiving health education from their

school going children. The Objectives were to find out existing knowledge, attitude and practice towards both acute diarrhoeal among school going children and parents; to find out improvement in knowledge, attitude, practice in children after giving health education to them; and also to find out the improvement in parent's knowledge, attitude and practice after providing health education to children regarding acute diarrhoeal diseases.

MATERIAL & METHODS

The study was Community based interventional study on school going children and their mothers. The Study area was Rural Health Training Centre, Kasegaon under the Dept of Community Medicine. The study populations were higher secondary students of Azad high school, Kasegaon and Study subjects were students of 8th and their mothers. All the students from 8th standard were included in study after applying exclusion criteria. For sample size following method was used ie from both standards equal numbers of students were randomly selected to include in study & control group. Out of all students in 8th standard of 193, a total 150 students were found eligible for study and hence 75 each students were taken as study and control group based on random selection. Students from 8th standard and their mothers were selected to assess the impact of health education in relation with diarrheal diseases. The current number was got only after exclusion criteria. The Exclusion criteria's applied were Children of 8thstandard who stays in hostel and Children of 8th standard attending school from remote area of Kasegaon. The permission of headmaster of school for the study and informed consent from both children and mothers were taken. All necessary institutional review board as well as ethical committee approval was taken prior to the start of the study**.** From the school, students of 8th and their mothers were study populations which were selected by applying above exclusion criteria. A pre-structured and pretested questionnaire was used to get the information regarding definition, causes, signs, symptoms, treatment, preparation of ORS, prevention of diarrheal etc. Total 12 were questions were asked to assess Knowledge, Attitude and Practice of which 4 for knowledge, 4 for attitude & 4 for practice for students from both standards & in case of mothers 13 were questions were asked to assess Knowledge, Attitude and Practice of ADD of which 4 for knowledge, 5 for attitude & 4 for practice. Scoring system was developed to assess both pre and post test performance of study and control group. Correct answer was given score 1 and wrong answer and uncertain answer 0.The grading of knowledge, attitude and practice was done as 0-1= Poor, 2=Average and 3-4 =Good. The grading for overall Knowledge, Attitude and Practice was done as 0-3= Poor, 4-7=Average, 8-12= Good. This was done in consultation with statistician & with the help of reference studies number 12.

Data was collected related to knowledge, attitude, practice on diarrhoeal diseases among 8th students and mothers in predesigned and pretested questionnaire for both study and control groups. The mothers were interviewed personally.

Children of study group was educated regarding causes, symptoms, signs, treatment and prevention of ARI and diarrheal diseases with the help of study instruments (charts, posters, demonstrations etc.). Demonstration on detection of dehydration, danger signals of dehydration and preparation of ORS was given in school to study subjects and assignments were given to them to perform same at home with the help of mother. Two separate books for assignments for children and for mother were maintained. The assignments were evaluated regularly by the investigator. The health education session was carried out 4 times in a month for 1 hour for study groups. Different techniques like experiments, drawing etc were used to impart health education. Health education sessions were not conducted for control group. After completing health education sessions post test questionnaire was asked to be filled by children of both study and control group & post test interview of mothers both group were carried out. The utmost care was taken to prevent the cross transmission of the Knowledge, Attitude and Practice of Acute diarrhoeal disease from study to control group like record books were collected back by investigator after in class assignments were over and assignment with mother was done only after dinner before going to bed and submit the same to immediately the next day to principal office and students were asked not show the assignments to other children.

RESULTS

The study had maximum number of children having age of groups 14yrs and 13yrs where as male gender (boys) which was found in maximum number compared to female (girls) in both groups. The difference between two groups was not found statistically significant ($p>0.05$).

Majority of parents had school education (Mothers 57.3% and Father 56%) whereas illiterate mothers were more than one third (36%). The difference in both study and control group was found statistically not significant. More than one fourth mothers of both groups were engaged in one or the other form of work. Majority of them were engaged in farm work (46.6%) followed by labour work

(30.6%). Similarly 90% of fathers were engaged in farming and 30% in labour work. Difference in two groups was found not significant. It was also observed that two third of students (64%) belonged to middle class followed by lower (20%) and upper class. No significant difference was found for socioeconomic status among both groups.

Table 1: Distribution according to parents Education, Occupation & Socioeconomic Status

Particulars	Study (n=75) (%)	Controls (n=75) (%)	Total (n=150) (%)	X^2 value	p value
Mother Education					
Illiterate	24(32)	30(40)	54(36)	1.25	0.534
School Education	45(60)	41(54.7)	86(57.3)		
College Education	6(8)	4(5.3)	10(6.7)		
Mother Occupation					
Housewife	10(13.3)	11(14.7)	21(14)	2.43	0.488
Farmer	39(52)	31(41.3)	70(46.6)		
Labour	19(25.3)	27(36)	46(30.6)		
Professional	7(9.3)	6(8)	13(8.67)		
Father Education				4.034	0.116
Illiterate	16(21.3)	23(30.7)	39(26)		
School Education	41(65.6)	43(57.3)	84(56)		
College Education	18(24)	9(12)	27(18)		
Father Occupation				2.102	0.349
Farmer	49(65.3)	41(54.7)	90(60)		
Labour	19(25.3)	27(36)	46(30.7)		
Professional	7(9.3)	7(9.3)	14(9.3)		
Socioeconomic Status				3.718	0.155
Upper Class	14(18.6)	10(13.4)	24(16)		
Middle Class	51(68)	46(61.3)	97(64)		
Lower Class	10(13.4)	19(25.3)	29(20)		

Table 2 A) Comparison between pre test and post test scores of children

Questions	Correct Answers - Pre Test			Correct Answers - Post Test		
	Study (n=75)	Control (n=75)	Total (n=150)	Study (n=75)	Control (n=75)	Total (n=150)
Q1	56(74.7)	40(53.3)	96(64)	75(100)	44(58.7)	119(79.3)
Q2	31(41.3)	25(33.3)	56(37.3)	68(90.7)	30(40)	98(65.3)
Q3	20(26.6)	11(14.6)	31(20.6)	70(93.3)	12(16)	82(54.6)
Q4	11(14.7)	8(10.6)	19(12.6)	67(89.3)	10(13.3)	77(51.3)
Q5	13(17.3)	12(16)	25(16.6)	66(88)	20(26.7)	86(57.3)
Q6	28(38.7)	19(25.3)	47(31.3)	72(96)	20(26.7)	92(61.3)
Q7	11(14.6)	8(10.7)	19(12.6)	69(92)	26(34.7)	95(63.3)
Q8	5(6.6)	4(5.3)	9(6)	54(72)	15(20)	69(46)
Q9	21(28)	16(21.3)	37(24.6)	66(88)	15(20)	81(54)
Q10	11(14.7)	15(13.3)	26(17.3)	66(88)	26(34.7)	92(61.3)
Q11	23(30.7)	36(48)	59(39.3)	71(94.7)	47(62.7)	118(78.7)
Q12	11(14.7)	10(13.3)	21(14)	66(88)	2(2.7)	68(45.3)

Table 2 B) Comparison between pre test and post test scores of Mothers

Questions	Correct Answers - Pre Test			Correct Answers - Post Test		
	Study (n=75)	Control (n=75)	Total (n=150)	Study (n=75)	Control (n=75)	Total (n=150)
Q1	40(53.3)	32(42.7)	72(48)	71(94.7)	47(62.7)	118(78.6)
Q2	26(34.7)	19(25.3)	45(30)	59(78.7)	22(29.3)	71(47.3)
Q3	19(25.3)	10(13.3)	29(19.3)	50(66.7)	20(14.7)	70(46.6)
Q4	10(13.3)	6(8)	16(10.6)	46(61.3)	11(14.7)	57(38)
Q5	20(26.7)	18(24)	38(25.3)	57(76)	21(28)	78(52)
Q6	21(28)	20(26.7)	41(27.3)	50(66.7)	24(32)	74(49.3)
Q7	15(20)	5(6.7)	20(13.3)	47(62.7)	16(21.3)	63(42)
Q8	14(18.7)	13(17.3)	27(18)	61(81.3)	13(17.3)	74(49.3)
Q9	24(32)	29(38.7)	53(35.3)	63(84)	30(40)	93(62)
Q10	27(36)	16(21.3)	43(28.6)	66(88)	31(41.3)	97(64.6)
Q11	2(2.7)	11(14.7)	13(8.6)	60(80)	14(18.7)	74(49.3)
Q12	9(12)	7(9.3)	15(10)	55(73.3)	10(13.3)	65(43.3)
Q13	7(5.3)	4(5.3)	11(7.3)	45(60)	11(14.7)	56(37.3)

Table 3: Comparision of Pre test score and post test score in Mother and Children*

Among Study Group	Pre test			Post Test			t	p
	Min score	Max score	Mean ±SD	Min score	Max score	Mean ±SD	value	value
Children								
Knowledge	0	4	1.65±0.87	1	4	3.73±0.60	18.32	0
Attitude	0	4	0.82±0.81	2	4	3.48±0.55	28.24	0
Practice	0	3	0.88±0.71	2	4	3.60±0.61	25.11	0
Overall KAP	0	6	3.37±1.52	8	12	10.81±1.08	34.21	0
Parent								
Knowledge	0	4	1.26±1.48	0	4	3.01±1.14	10.91	0
Attitude	0	5	1.25±1.30	0	5	3.70±1.52	13.6	0
Practice	0	3	0.60±0.75	0	4	3.01±1.32	16	0
Overall KAP	0	11	3.12±3.09	7	13	9.32±3.06	17.78	0
Among Control Group								
Children	0	4	1.46±0.99	0	4	1.68±0.77	-1.97	0.052
Knowledge	0	4	0.78±0.72	0	4	0.89±1.13	-0.782	0.436
Attitude	0	3	0.74±0.67	0	4	0.77±0.79	-0.228	0.82
Practice	0	6	2.93±1.54	0	9	3.33±1.74	-1.79	0.077
Overall KAP								
Parent								
Knowledge	0	4	1.25±1.17	0	4	1.33±1.40	-0.715	0.477
Attitude	0	4	1.17±0.99	0	5	1.25±1.27	-0.903	0.369
Practice	0	3	0.69±0.78	0	4	0.80±1.15	-0.157	0.251
Overall KAP	0	12	3.16±2.52	0	13	3.38±3.45	-0.939	0.351

*Paired t test used

Table 4) Comparison of Mean of Knowledge, Attitude and Practice between Study and control group in Pre test and Post test@

	Pre Test (Mean ±SD)				Post Test (Mean ±SD)			
	Study	Control	t value	p value	Study	Control	t value	p value
Children								
Knowledge	1.65±0.87	1.46±0.99	1.221	0.224	3.73±0.60	1.68±0.77	18.156	0
Attitude	0.82±0.81	0.78±0.72	0.319	0.75	3.48±0.55	0.89±1.13	17.75	0
Practice	0.88±0.71	0.74±0.67	1.17	0.244	3.60±0.61	0.77±0.79	24.292	0
Overall KAP	3.37±1.52	2.93±1.54	1.757	0.081	10.81±1.08	3.33±1.74	31.545	0
Parent								
Knowledge	1.26±1.48	1.25±1.17	1.008	0.951	3.01±1.14	1.33±1.40	8.018	0
Attitude	1.25±1.30	1.17±0.99	0.031	0.673	3.70±1.52	1.25±1.27	10.701	0
Practice	0.60±0.75	0.69±0.78	0.977	0.46	3.01±1.32	0.80±1.15	10.944	0
Overall KAP	3.12±3.09	3.16±2.52	0.097	0.931	9.73±3.06	3.38±3.45	11.886	0

@ Independent t test applied

The proportion of children giving correct answers to the questions in pre test was from 5% to 74.7% in both groups. The difference was not found statistically significant (X^2=9.940, p value= 0.5358) where as the proportion of children giving correct answers was found to be raised in Post test among study group whereas there was almost no change or little increase in proportion of correct answers by control group (X^2=56.82, p value=0.0001).

Similar to the pre test of children, pre test of mothers of both groups was carried out. In which 13 questions related to diarrhoeal diseases were asked. Similar questions were asked in post test of mothers to access their Knowledge, Attitude, and Practice after taking intervention. In pre test of mothers it was observed that the answers for almost all questions were proportionately same in both the groups, whereas in post test there is increase in the proportion of correct answers among mothers of study group for each question as compared to the mothers of control group. According to results, percentage of parents of study and control group children given correct answers to the questions in pre test varied from 5.3% to 53.3%. The difference is not found statistically significant (X^2=17.14, p value=0.1444) where as in post test proportion of correct answers given by mothers increased and were found significant. The results also shows the comparison between X^2 value and p value of overall Knowledge, Attitude and Practice scoring & KAP individual scoring in pre test and post test regarding Knowledge, Attitude and Practice of Acute Diarrhoeal diseases among study and control group of children.

From Table 2 it was clear that children in both groups were having poor to average Knowledge, Attitude and Practice scoring but after intervention i.e. health education to study group showed significantly increased Knowledge, Attitude and Practice score than control group which was not subjected to any intervention (Health education).Table 2 also shows the comparison between X^2 value and p value of overall Knowledge, Attitude and Practice scoring and Knowledge, attitude and practice scoring of mothers of both groups in pre and post test regarding Acute Diarrhoeal diseases.

Table 5 depicts the difference between mean scoring of Knowledge, attitude and practice and overall Knowledge, Attitude and Practice in pre and post test of Children as well as mother. According to Table V, the mean scoring had increased significantly in both children and mothers of study group in whom intervention (Health education) was done, whereas mean scoring had not increased significantly among children and mothers of control group, without intervention (Health education) about Acute Diarrhoeal diseases.

Table 3 and 4 show differences in mean scoring of Knowledge, Attitude and Practice, and overall Knowledge, Attitude and Practice of children & their mothers of both groups. The mean of overall Knowledge, Attitude and Practice and individual KAP score was not found having significant difference of both group among children and their mothers during pre test. After intervention, mean score of overall Knowledge, Attitude and Practice and individual KAP was increased among children of study group (intervention) and their mothers compared to non intervention group.

From above results it was clear that poor and average Knowledge, Attitude and Practice regarding acute diarrhoeal diseases among children had significantly increased (Good) after giving Health Education and demonstration to study group compared to control group to whom these sessions were not conducted. Even Knowledge, Attitude and Practice of mothers of children for whom sessions were conducted had increased significantly, from poor to good, in comparison with mothers of children for whom sessions were not conducted. But there was slight increase in the Knowledge, Attitude and Practice among the control group among children but not in mothers, which was not significant and can be attributed to cross transmission of health education from study to control group.

DISCUSSION

Pre and post test results in Acute Diarrhoeal Diseases among Children

The percentage of correct answers given by children in pre test and later in post test was observed significantly improved in study group than control group. Danielle Ferreira de Magalhães et al[8], C.E.O Reilly et al[9], Olajide Williams and James M. Noble[1], Christopher Vaughan et al[11] and PR Walvekar et al[12] alsofound similar improvement in post test among study group compared to control group.

Distribution according to grades in knowledge, attitude, practice and overall Knowledge, Attitude and Practice of children in current study showed that in maximum proportion of study & control group were having average knowledge (56% vs. 50.7%), poor attitude (74.7% vs. 76%) and poor practice (82.7% vs. 85.3%) in pre test regarding Acute diarrhoeal diseases whereas in post test there is significant change in K,A,P of study group (Good = 94.7%, 97.3%, 93.3%) compared to control group which remained same or slightly increased.

These finding are almost similar to the studies of A Tragler[13]& IO Fawole et al[14] in which significant increase in Knowledge, Attitude, Practice after experiment (Health education) was observed.

The proportion of correct answers among mothers in pre test and later in post test showed significant increase in study group while in control group there was mild or almost no change suggesting that the children of study group have passed right message to the mothers. Similarly Danielle Ferreira de Magalhães et al[8] observed the less proportion of correct answers by family members before the intervention. At the final follow-up they found increased proportions of correct answers which were significant among intervention group compared to control group. Also study by C.E.O Reilly et al[9] showed improvement in Knowledge regarding correct water treatment after intervention, Elizabeth Blanton et al[15] showed that parental awareness of flocculent disinfection of water increased after intervention & Christopher Vaughan et al[11] showed correct responses between the pre test and post test, mothers improved significantly. All the findings are suggestive of children are the best media to transfer information to the family members.

The above results of current study were similar to study conducted by Huda M. Haroun et al[16] reported that due to health education there was significant change in post test of parents i.e. knowledge of mothers pertaining to definition of diarrhoea, its dangers, when to seek medical help, and the three rules of home management.

Paired t test comparison between pre test and post test of study group of both children and mother showed there was significant difference in both pre test and post test due to intervention (health edu-

cation) i.e. in acute diarrhoeal disease intervention regarding children knowledge, attitude, practice, overall Knowledge, Attitude and Practice & in mother's knowledge, attitude, practice, Overall Knowledge, Attitude and Practice. But paired test in control group in pre test and post test among both children and parent showed no significant difference. Similar changes observed in 9th standard students among Acute respiratory infection intervened children's knowledge, attitude, practice, overall Knowledge, Attitude and Practice & in mother, knowledge, attitude, practice, Overall Knowledge, Attitude and Practice.

Independent t test carried between study group and control group in both children and mother of acute diarrheal disease and acute respiratory infection groups. In pre test it was observed that there is no significant difference in the mean Knowledge, Attitude and Practice on Acute diarrhoeal disease and mean Knowledge, Attitude and Practice on Acute respiratory infection group among students and their mothers of study as well as control group but in post test both children and mother showed significant difference in study group but no such difference was observed among control group and their mothers of 8th& 9th standard. So it suggests that child to parent education had taken place and is the main reason for changes in knowledge, attitude and practice of both children and mothers.

Danielle Ferreira de Magalhães et al[8] reported similar findings. After the intervention, the proportion of correct answers by family members was significantly ($p<0.05$) increased in intervention group compared to control group regarding visceral leishmaniasis. Also study of Niki Harre and Anna Coveney[17] showed results in support to the current study i.e. the significant increase in post test answers as compared to pre test in both students and their mothers. PR Walvekar et al[12] showed similar results i.e. overall improvement in knowledge of study group after intervention compared to control group. IO Fawole et al[14] conducted study on effectiveness of school based AIDS education programme for secondary school students in Nigeria. In pre test, knowledge, Attitude & Practice of study group students had fair score while in post test had good score, while in control group there was no such difference in pre test and post test was observed. Hence the intervention had produced effective change in students.

CONCLUSION

To conclude Mother's knowledge, plays an important determinant of child health. From the study we can interpret that the there was an significant increase in the knowledge, attitude and practice of children as well as mothers post health education. The cost involved in the study is feasible and hence such child to parent teaching models can be replicated in rural as well as urban areas. In light of these observations, future school-based health and hygiene education programs should include strategies to involve family members, particularly mothers and siblings.

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