THE USE OF ORS (NIMKOL) IN MANAGEMENT OF CHILDHOOD DIARRHOEA BY MOTHERS IN THE SUBURBS OF RAWALPINDI-ISLAMABAD

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ABSTRACT

A total of 595 respondents (200 from urban Kachi-abadis and 395 from rural communities of. Rawalpindi-Islamabad) were interviewed for their knowledge about the use of ORS (Nimkol) in childhood diarrhoea. Most of the respondents were mothers with low literacy rate (23%). The prevalence of current diarrhoea among children was 36.8% on the day of interview whereas 57% of the children had history of having suffered from an episode of diarrhoea during the past two weeks. About 75% respondents claimed that they had an experience of using ORS (Nimkol). Most of them (72.1%) had used ORS (Nimkol) for childhood diarrhoea and dehydration and 28% had used it for diseases other than childhood diarrhoea or on doctor's advice. Only 11% mothers of children who were currently suffering from diarrhoea were using ORS (Nimkol) and afew mothers mentioned of giving home made fluid remedies like salt- water, salt-sugar-water or lemon-sugar-salt water for childhood diarrhoea. The use o'f ORS (Nimkol) was more common among the families with higher income. Regarding the preparation of ORS (Nimkol) solution, 57.8% respondents had fairly accurate knowledge. Fifty percent of the respondents had procured ORS (Nimkol) from the hospitals or clinics. (JPMA 40: 178, 1990).

INTRODUCTION

Acute diarrhoea is a major health problem among children in developing countries like Pakistan which may threaten their health and sometimes their lives[1]. The World Health Organization (WHO) introduced oral rehydration therapy (ORT) in the past decades and had made considerable investment for the promotion of oral rehydration salt (ORS)-Nimkol as the preferred treatment for acute childhood diarrhoea[2]. The concern about the extent to which ORS had been accepted. by the general population had led to a series of studies in the recent past which indicated that the knowledge about ORS had been increasing gradually during the past few years[3-6]. A major increase in awareness and utility of ORS (Nimkol) occurred in the late 1980's with an evidence of increased use of ORS m 1987-88, due to extensive promotional efforts[2,7]. The Planning and Development Division, Government of Pakistan conducted a study in 1984 which showed that 32% of mothers in rural areas and 50% of mothers in urban areas reported the use of ORS[8]. PRITECH in. 1989 had also reported an increase in the awareness and use of ORS by health care personnel and patients[9]. Our study was related to childhood diarrhoea among families belonging to relatively low socio-economic status in urban (kachi-abadies) and rural areas of Rawalpindi and Islamabad. The study was conducte4 in summer as the prevalence of diarrhoea in such families is higher in hot season10. In- this paper we present the data on the knowledge and use of ORS (Nimkol) in childhood diarrhoea by respondents and how its use is related to their age, education and socio-economic conditions.

METHODOLOGY

The study was carried out in urban (authorised and unauthorised) working class settlements and rural and semi-rural communities located at a distance ranging between 5 to 45 kilometers from the metropolitan boundaries of Rawalpindi & Islamabad. The households which had children with ages upto 36 months were selected by stratified multistage random sampling. The selection of households was done by using union council lists or lists prepared by local guides because of the spotty and, at times, inaccurate census records of the union councils. The local informants, especially children, helped in identifying households which had children of the appropriate age. The villages of eight union councils and five urban settlements were selected for the study. The headmen of the urban settlements and councillors of union councils were approached and the purpose of the study explained to seek their participation and cooperation. The survey was conducted from June to September 1988 when the day time temperatures ranged between 35-45°C. The research team undertook this study as the first phase of an ongoing effort to document sociodemographicàlly significant beliefs and practices regarding diarrhoea in these areas. For this purpose a questionnaire was utilized which was applied to 595 mothers (95.8%) and other primary caretakers of children. This questionnaire was pretested and revised and the interviews were conducted in the local dialect. The topics covered in the survey included the diarrhoeal prevalence among children of ages upto 36 months, the practices regarding fluid intake during diarrhoea, the respondents knowledge and use of ORS (Nimkol) for acute childhood diarrhoea.

Statistical Analysis

The parameters included in this paper were categorised according to suitable breakup. Two way contingency tables were constructed for mutually exclusive categories for different variables. The Chi-square (X2) test was used to determine the association between variables. On the basis of Chi-square test p-values were calculated for knowing the degree of association between parameters.

RESULTS

The sample included 200 respondents from the urban settlements (Katchi-abadis) and 395 from thó rural communities. They were mostly mothers (95.8%). Extended family households were 29% in urban and 57% in rural areas, with the remainder being nuclear family households.

Childhood diarrhoea

Out of a total of 741 childreti below three years of age (mean age: 18.3 months), 36.8% were experiencing an episode of diarrhoea at the time of interview, which was found to be maximum at the age of 17 months (Figure I).

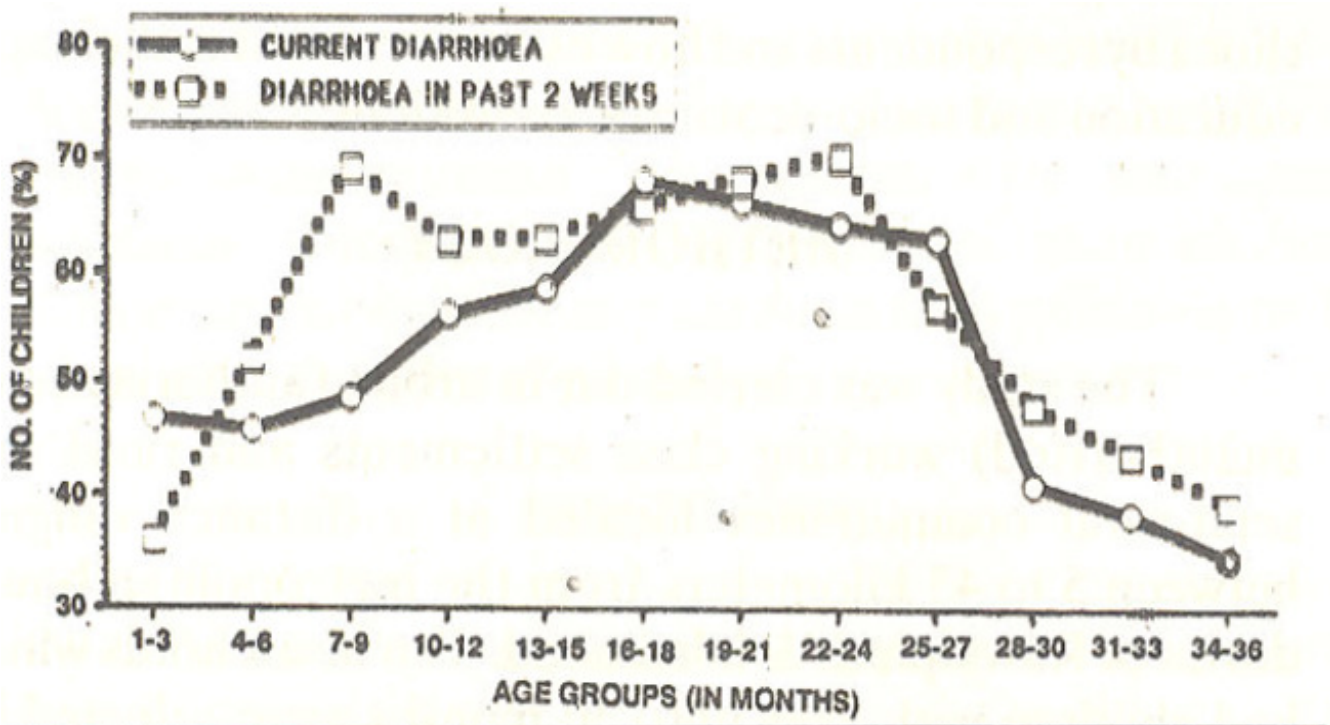

Figure 1. Age-wise distribution of current diarrhoea and diarrhoea in past 2 weeks.

However, during the past 2 weeks the diarrhoeal prevalence was high and was reported in 57% children.

ORS (Nimkol) : reported use

Three quarters of the respondents reported that they had occasionally used ORS (Nimkol) (Table-I)

TABLE I. Use of ORS (Nimkol) in urban and rural areas

n=595

Use of Nimkol	Urban (Slums)		Rural (Villages)		Total	
	n	(%)	n	(%)	n	(%)
Used	161	(80.5)	287	(72.7)	448	(75.3)
Not used	39	(19.5)	108	(27.3)	147	(24.7)
Total	200	(100)	395	(100)	595	(100)

Chi-square = 4.0 (p-value = 0.04)

The awareness and utility of ORS (Nimkot) was reported by a greater percentage of urban respondents and the use of ORS (Nimkol) was significantly more common among families with higher monthly income (p = 0.01) (Thble-II). The literacy rate was significantly associated with proper preparation of ORS (Nimkol) (p = 0.02). Among mothers who had previously used ORS (Nimkol), 57.8% had accurate knowledge of mixing the solution, whereas some knowledge of mixing ORS (Nimkol) was found among 34.4% of respondents (1 liter for the standard packet) (Table II).

TABLE II. Use of ORS (Nimkol) according to family income. (n=595)

Income group	Average income	Nimkol used		Nimkol not used		Total	
Rupees	Rupees	n	(%)	n	(%)	n	(%)
Up to 1000	908	301	(71.7)	119	(28.3)	420	(100)
1001-2000	1477	86	(81.9)	19	(18.1)	105	(100)
2001-3000	2640	28	(87.5)	4	(12.5)	32	(100)
> 3000	4342	33	(86.8)	5	(13.2)	38	(100)
Total	1321	448	(75.3)	147	(24.7)	595	(100)

Chi-Square = 10.7 (p = 0.01)

TABLE III. Knowledge for preparing ORS (Nimkol) solution according to the education of Respondents. n = 488

Education	No Knowledge		Some Knowledge		Accurate Knowledge		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Illiterate	33	(9.7)	125	(36.8)	182	(53.5)	340	(100)
Read & write	2	(7.7)	7	(26.9)	17	(65.4)	26	(100)
Primary	0	(0.0)	12	(28.6)	30	(71.4)	42	(100)
> Primary	0	(0.0)	10	(25.0)	30	(75.0)	40	(100)
Total	35	(7.8)	154	(34.4)	259	(57.8)	448	(100)

Chi-square = 15.1 (p = 0.02)

The accuracy of container size usàd for preparation of ORS (Nimkol) was related to the level of education acquired by the respondents (Table IV).

TABLE IV. Size of container used for preparing ORS (Nimkol) solution according to the education level of respondents. n=446

Education	Wrong size		Approximately correct		correct		Total	
	n	(%)	n	(%)	n	(%)	n	(%)
Illiterate	54	(94.7)	85	(81.7)	201	(70.6)	340	(76.3)
Read & write	1	(1.8)	3	(2.9)	22	(7.7)	26	(5.8)
Primary	2	(3.5)	10	(9.6)	30	(10.5)	42	(9.4)
Above primary	0	(0.0)	6	(5.8)	32	(11.2)	38	(8.5)
Total	57	(100)	104	(100)	285	(100)	446	(100)

Chi-square = 19.8 (p = 0.003)

Among the respondents older than 20 years, age had a significant inverse correlation with the use of ORS (Nimkol) (p = 002) (Table V).

TABLE V. Use of ORS (Nimkol) according to age of respondents. n=595

Respondents' age (in years)	Used		Not used		Total	
	n	(%)	n	(%)	n	(%)
Up to 20	37	(69.8)	16	(30.2)	53	(100)
21-30	266	(79.9)	67	(20.1)	333	(100)
31-40	128	(71.1)	52	(28.9)	180	(100)
41-50	13	(59.1)	9	(40.9)	22	(100)
>50	4	(57.1)	3	(42.9)	7	(100)
Total	448	(75.3)	147	(24.7)	595	(100)

Chi-square = 10.7 (p = 0.02)

Curiously, no relationship between the presence of radio or television in the house and the use of ORS (Nimkol) was observed thereby showing no major effect of broadcasting media in the propagation of the use of ORS (Nimkol). On the whole 30% of respondents had ORS (Nimkol) packets in the household, which were shown to the interviewers. Among those respondents who had ORS (Nimkol) packets in the house, half had acquired them from hospitals or private clinics while rest of them had obtained them from other sources (Figure 2).

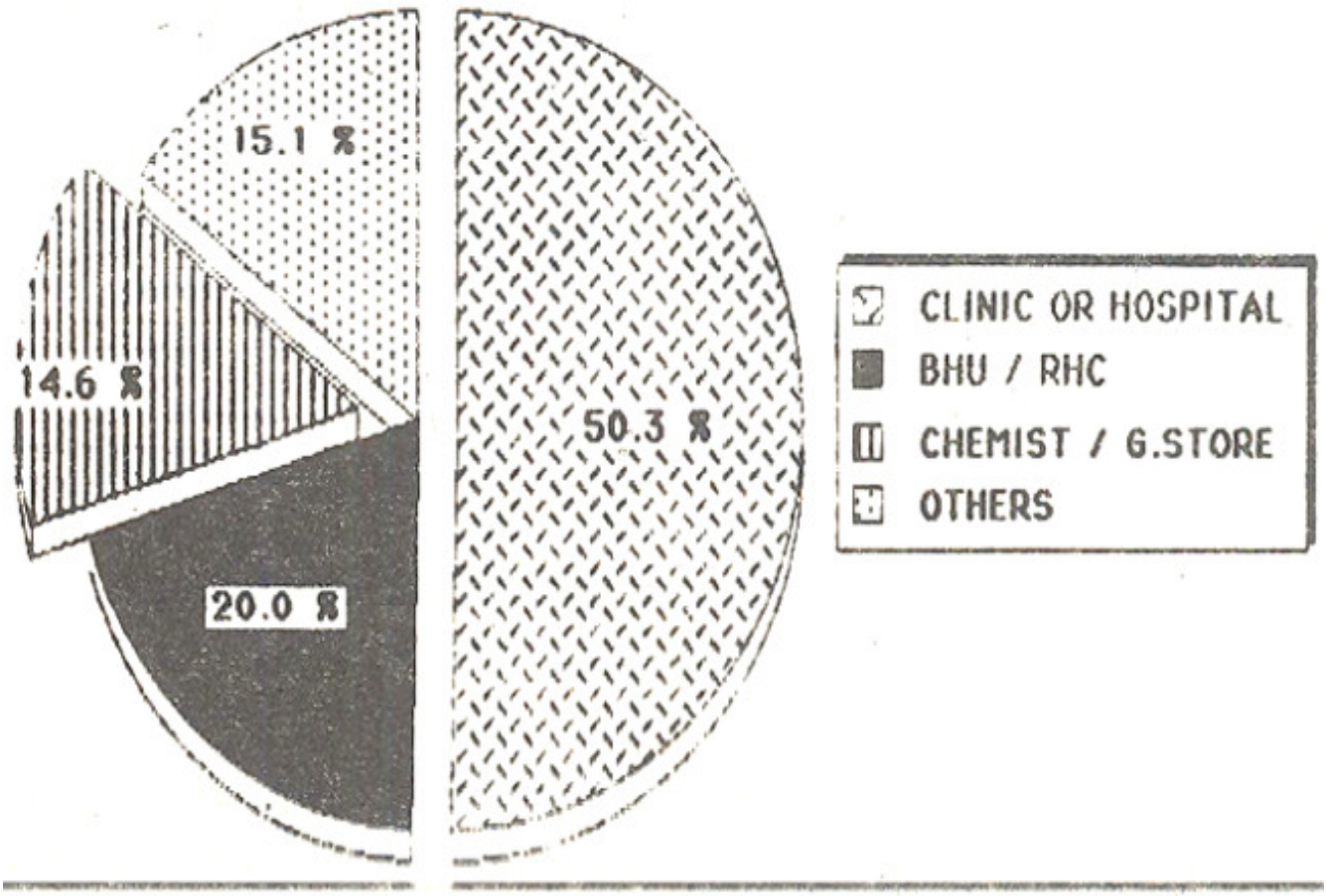

Figure 2. Sources of ORS (NIMKOL).

The number of respondents who had an experience of using ORS (Nimkol) in, the past was 75.3% and out of these 72.1% used ORS (Nimkol) for diarrhoea and dehydration, while the rest bad employed it for other diseases (11.7%) and on doctors' advice (16.2%). ORS (Nimkol) and diarrhea. Although the reported use of ORS (Nimkol) in childhood diarrhoea was high among our sample and ws similar to the results obtained by the Planning and Development Division, Pakistan 1984, the actual use of ORS (Nimkol) was somewhat questionable as only 24.3% of households with children, who were currently suffering from diarrhoea, had ORS (Nimkol) packets while on the other hand 36% of households having unaffected normal children had ORS (Nimkol) packets. In cases of current diarrhoea, the mothers were asked as to what type of liquid their children were taking. Out of the 245 mothers who responded to this question, only 11% mentioned giving ORS (Nimkol) on that very day. Fifty-four percent of motherswere giving their children breastmilk, 9.0% were giving glucose water and a few mentioned salt water, salt-sugar-water and lemon-sugar-salt-water (Sikanjbeen). Nevertheless, the mothers did consider ORS (Nimko!) as a good treatmónt for childhood diarrhoea/dehydration. About 16% of mothers from urban areas mentioned that they used ORS (Nimkol) on the advice of physicians, and out of the mothers living in rural areas, nearly one fifth gave this very reason for the use of ORS (Nimkol) in childhood diarrhoea.

DISCUSSION

The ORT has a well established scientific basis and its ability to save children's lives in acute diar-rhoea! disease has been convincingly demonstrated[3]. The Ministry of Health, Pakistan has conducted a

major effort to promote ORT use nationwide[2]. Saade (1989) reported that 30 million packets of ORS (Nimkol) were produced annually in Pakistan[9]. In our study it was observed that Pakistani mothers were gradually becoming more aware of ORS (Nimkol) as 75.3% of respondents claimed that they had the experience of using it occasionally. However, the concept varied about the purpose of ORS (Nimkol) administration in childhood diarrhoea. It was found that 72.1% respondents used ORS (Nimkol) to treat childhood diarrhoea or dehydration while about 28% used it on doctor's advice or for the treatment of other diseases. There is a need for a clear understanding of the use of ORS (Nimkol) by the general population. This would require beth the use of local terminology of illnesses associated with diarrhoea and the conceptual translation of dehydration[11,12]. The findings revealed that while a majority of rural mothers were familiar with general concept of ORT, most of them were not using the therapy in an effective manner. The most frequent error was the administration of ORS (Nimkol) in inappropriately small quantities, presumably because of an inadequate understanding of the principles of water replacemtnt in serious cases of dehydration. In this study nearly 42% of mothers were not administering ORS (Nimkol) accurately. Such a high frequency of wrong administration ofORS (Nimkol) was mainly due to lack of education among respondents as 78% of them were found to be illiterate. Hence, there is a greater need for Pakistani mothers to become educated because they can readily learn and practice the correct use of ORS (Nimkol). Another factor affecting the use of ORS (Nimko!) among mothers was related to their age. It was found that young mothers were more likely to use ORS (Nimkol) packets as compared to their tilder counterparts. The use of ORS (Nimkol) among respondents below 21 years of age was 69.8%. This increased to 79.9% in the age group 21-30 years and then there was a decline in the administration of ORS (Nimkol) with increasing age. This may be due to a relatively less awareness among young girls about the health problems of children. The older women of underdeveloped areas had their own rigid concepts about the treatment of diarrhoea and, dehydration, therefore they were not very enthusiastic about the use of ORS (Nimkol) as compared to the younger respondents. The present study also revealed that about one-third of the respondents did not use 'correct-sized containers. This was particularly due to the confusion caused by the varying amount of water (half or one liter) required by different sized ORS packets for the preparation of solution. Mull & Mull reported that some Pakistani mothers mixed half a packet ofORS in 1000ml of water while others mixed one packet in 250ml of water[6]. It was also observed that the frequency of the use of ORS (Nimkol) packets was less in low income households as compared with higher income houses. When questioned about the source of obtaining ORS (Nimkol), it was found that half of the ORS (Nimkol) packets were procured from hospitals/clinics whereas only one-seventh of respondents purchased them from chemists/general stores. The likely reason was that ORS (Nimkol) packets were mainly supplied to the 'hospitals and clinics and no proper system of their distribution to chemists/general stores was available. Moreover, ORS (Nimkol) packets were very cheap and did not provide any significant margin of profit to the shopkeepers. Therefore, general stores and chemists were not interested in having adequate stocks of ORS (Nimkol) packets. As hospitals and private clknics were not close to all houses, so mothers sometimes gave home made saltwater solution, sugar-salt-water solution or lemon-sugar-salt solution to their children who were suffering from diarrhoea. Although such home nfade remedies were generally good for diarrhoea and dehydration but most of the mothers used ORS (Nimkol) packets for diarrhoeal treatment. These results highlighnhe observations that the awareness of ORS (NimkOl) use both among the doctors and respondents is increasing. Most of the doctors reported' that a number of their childhood diarrhoea patients were already being given ORS by their mothers even before consulting them. Thus it is felt that ORS (Ninikol) should be sold at general stores besides chemists shops so that it is easily available to consumers. It was concluded from this study that in Pakistani mothers the awareness about the use of ORS (Nimkol) was increasing. The use of ORS (Nimkol) was more common among the families with educated mothers and who had higher income, though the incidence of diarrhoea was much higher among the children of poor

families. One half of the mothers had accurate knowledge about the preparalion of ORS (Nimkol) solution. There is still a need to make concerted efforts to popularize the use of ORS (Nimkol) in our general population and to educate the mothers about the accurate use of ORS (Nimkol). If the mothers could learn to treat their children properly with ORS ‘for diarrhoeal disease at an early stage, then the morbidity and mortality due to childhood diarrhoea could be reduced to a considerable extent.

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