

**PRACTICES OF HOME MANAGEMENT OF CHILDHOOD DIARRHEA AMONG PARENTS OF UNDER-5 CHILDREN WITH DIARRHOEAL DISEASE IN RURAL AREAS OF HIMALAYAS****Dr. Vijay Verma<sup>1</sup>, Dr. Ravi Verma<sup>2</sup> and Dr. Supriya<sup>3</sup>**<sup>1</sup>Department of General Surgery, Civil Hospital Theog, H.P, India.<sup>2</sup>Department of Paediatrics, Civil Hospital, Kandaghat, H.P, India.<sup>3</sup>Department of General Surgery, Dr. RPGMC, TANDA, Kangra, H.P, India.**\*Corresponding Author: Dr. Supriya**

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**ABSTRACT**

**Background:** Acute gastroenteritis is the second most important cause of morbidity and mortality in developing countries. Home-based management of diarrhea is a globally recommended approach to decrease this trend and avert preventable deaths among under-five children. **Objectives:** To explore the practice of home management of diarrhoea among parents of under-five children. **Methods:** Parents of children under 5 years of age who presented to Civil Hospital, Kandaghat and not taking treatment from any other hospital, were interviewed on the basis of a predesigned proforma. **Results:** Parents of 224 children who met the inclusion criteria, were interviewed. ORT accessibility was found to be 60.2% in children with diarrhea. Teething contributed to 45% of the perceived etiology of diarrhea. **Conclusion:** In our study, we found out that management of diarrhea (acute gastroenteritis) at home was grossly inadequate. Their awareness of ORS was high. However, the actual practice of home management of diarrhoea was relatively low. We also found discrepancies in the method of preparation and administration of ORT.

**KEYWORDS:** Diarrhoea, home management, knowledge, ORS, Oral rehydration therapy(ORT).**INTRODUCTION**

Diarrhea is the second leading cause of mortality globally among children between 1-59 months of age with estimated 1.8 million childhood deaths each year accounting for about 17% of total childhood deaths.<sup>[1][2]</sup> Diarrhea accounts for about 12.5% of deaths in children less than 5 years in India.<sup>[3]</sup> Diarrhea also causes substantial morbidity worldwide; with 2.4 episodes of diarrhea in children each year in children less than 5 years.<sup>[4]</sup> Without correct and prompt treatment multiple and frequent episodes of diarrhea can lead to various micro and macronutrient deficiencies, stunting and cognitive delay.<sup>[5][6]</sup>

Home-based oral therapy in the management of diarrhea has been recognised and advocated by the World Health Organization (WHO)<sup>[7]</sup>, the United Nations International Children's Emergency Fund (UNICEF)<sup>[8]</sup> and the Integrated Management of Childhood Illness to reduce the impact of diarrhoea, particularly on children.<sup>[9]</sup> A recent review from developing country suggests that recommended treatment is being received by only 39% of affected children.<sup>[10]</sup>

The role of appropriate management of diarrhea at home is well established and recognized and even helps parents to recognize symptoms and offer home remedies before a doctor can arrive. Home based treatment becomes even more essential and life saving in a resource limited country as ours where there is substantial delay in getting to a doctor. Thus, parents need to be demonstrated and taught ability to properly manage diarrhea at home.

Oral rehydration therapy (ORT) is provision of oral fluids to replace ongoing fluid losses from body. ORT is divided into 2 phases, 1) rehydration phase in which fluid and electrolytes are administered as oral solution to replace fluid lost by diarrhea, 2) and a maintenance phase which includes replacement of ongoing fluid and electrolyte losses plus adequate dietary intake. Recommendations for use of ORT have evolved over years based on advancing knowledge and research.

In this study we evaluated the understanding and practices of management of diarrheal diseases at home amongst care providers (parents) in our region and inferred the need of proper education of the health care providers at the sub center level to further educate the general public.

**METHOD**

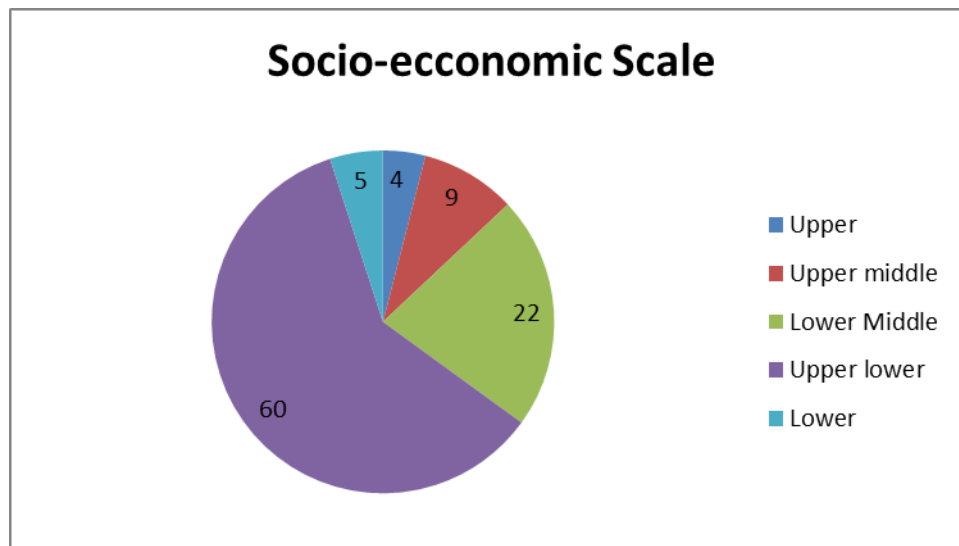
We interviewed 224 mothers of children under 5 years of age who presented to our hospital with acute gastroenteritis over a period of 1 year. A predesigned proforma of 15 questions was made and each parent of child who presented with diarrhea was asked to fill the proforma. Proforma covered essential questions like, duration of diarrheal episode, perceived cause of diarrhea, use of ORS at home, reasons against not using ORS, method of preparation of ORS and timing of administration, knowledge about common sign and symptoms of dehydration. Parent of patients with a history of intake of an ORT fluid were asked about type of solution used and how they prepared the solution, volume of water used for making the solution. We also enquired about use of antibiotics and other medications by parents. Socio-economic class was determined using Kuppaswamy scale. Only children presenting with acute watery diarrhea without other symptoms were included.

Children who were treated at other health care centers (govt./private) were not included in our study.

**RESULTS**

1) Demographic and socio-economic characteristics.

224 parents of children under 5 years were included in our study with 88 (39%) were having education higher than secondary school, 68 (30%) of parents had been educated upto middle school (8<sup>th</sup> std.), 42(19%) left studies before primary school and remaining, and remaining 26(12%) (Mostly laborers) were uneducated. According Kuppaswamy scale 29 (13%) belonged to upper and upper middle class, 49(22%) belonged to lower middle class, 135(60%) belonged to upper lower class, and remaining 11(5%) belonged to lower class. Number of males were 126(56.2%) and females were 98(43.7%) and majority of children were less than 1 year of age 156(70%) and remaining were between 1 and 5 years 68(30%).



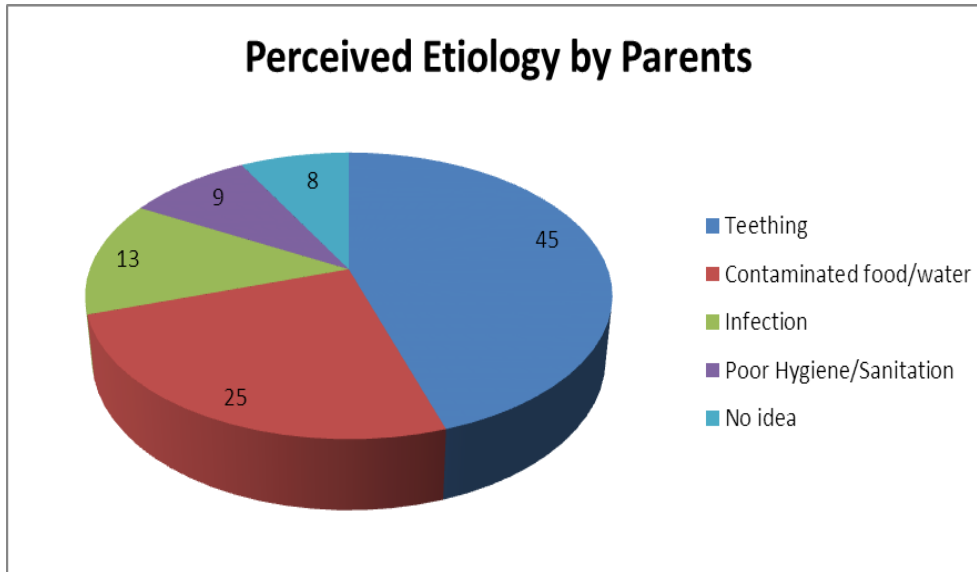
2) Perceived etiology by parents.

Eruption of teeth was considered to be main reason behind diarrhea in infants between 6months and 12

months. Distribution of different etiologies perceived by parents as a cause of diarrhea is given in following table.

**Table 1: Distribution of different etiologies perceived by parents as a cause of diarrhea.**

	Frequency	Percentage
Teething	101	45%
Contaminated food/water	56	25%
Infection	29	13%
Poor hygiene/sanitation	20	9%
No idea	18	8%
Total	224	100%



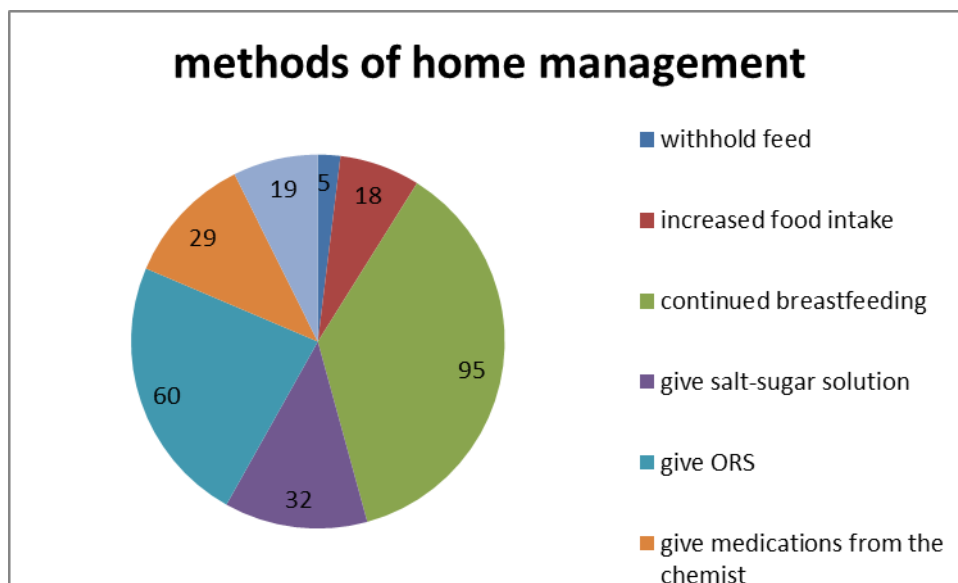
**3) Home management of Diarrhea**

Amongst 224 parents, 135 (60%) started their child on some form of oral rehydration therapy before they reached hospital. Out of these 136 parents, 104 (77%) had no idea whether ORS helps to restore body fluids and electrolytes; remaining 32 (24%) believed that ORT can stop diarrhea. Among the remaining 89 who did not

give ORS to their children before reaching hospital, 74 (83%) had no experience in starting ORS or use of any other fluid for diarrhea, the remaining 15 (17%) gave other reasons like not having time to prepare ORS before hospital visit, non-availability of ORS sachets, not starting ORT as diarrhea is less severe.

**Table 2: Parent responses to possible methods of home management of diarrhea (multiple response taken into account)**

Methods mentioned	frequency
Withhold feed	5%
Increase food intake	18%
Continue breastfeeding	95%
Give salt-sugar solution	32%
Give ORS	60%
Give Drugs/medication from the chemist	29%
Give traditional/herbal medicine	19%



Most of the care givers continued feeding their child despite loose stool 213(95%) while remaining 11(5%) stopped feeding. Reason for stopping feeding was frequent vomiting (6/11), belief that feeding will aggravate diarrhoea (1/11) and child's refusal to accept feed (4/11). 135(60%) children received WHO ORS, and 72(32%) received some form of home based sugar-salt/water solution or soup alone/along with ORS. It was noted during our study that in children being provided WHO ORS solution; majority was prepared by mixing arbitrary amount of ORS from sachet added less than 1 litre of fluid. Overall 78.5% (106/135) parents were giving wrongly constituted ORS mixtures. The method of administration of ORS was also different among parents. It was noted in our study that 64(29%) children already received antibiotics, mostly Ofloxacin and Metronidazole before reaching us.

### DISCUSSION

60% of parents were found to be using ORT in their children with diarrhoea before presenting to our hospital. This frequency was less, but goes with the trends already stated in literature. According to a WHO report, the data showed increasing trend in many countries.<sup>[11]</sup> It was found that benefit of giving ORT in management of acute gastroenteritis has not been fully realised, similar trends were seen in literature from developed countries with various papers from US and Europe showing that these benefits of ORS are seldom realised.<sup>[12][13][14]</sup> One probable reason for this might be use of IV fluids therapy and reduced appeal of ORT.<sup>[15]</sup> A worrisome observation was that many parents used incorrect amount of water to make ORS at home, many did not know the recommendation for how much volume of water should be used to prepare ORS resulting in children being offered a solution which was either hypotonic or hypertonic which resulted in marked electrolyte disturbances. It has been widely stated and recognised that hypernatremia due to sodium excess is quite commonly caused due to improperly mixed ORS. Conversely excess of water in ORT in relation to solute is a major cause of diarrhoea.<sup>[16]</sup>

Many of the care givers had previous experiences with using ORT but in our study, there was no significant difference in terms of preparation and administration of ORT from those using it for the first time. The major concern we found in our study was that there was no statistically significant difference between performance of those parents who received the information regarding ORT composition and administration from health workers versus those who did not.

We could not evaluate the electrolyte status in our patients. It is well known in literature that improperly constituted ORS solution can lead to electrolyte imbalances and may worsen clinical condition of children. Thus we recommend, that a proper and detailed history should always be taken stressing on type of fluids being given to the child, duration of ORT, composition,

sign and symptoms of electrolyte imbalances particularly hyponatremia and hypernatremia. We also noted a general trend towards administration of antibiotics 64(28.5%) in children of acute diarrhoea presenting to us. These antibiotics were taken over the counter from some local chemist with a general belief in community that diarrhoea is always infectious. We think that such practices should be strongly discouraged as it leads to antimicrobial resistance and also increase financial burden on parents with no benefit of treatment course and duration of illness.

### CONCLUSION

In our study, we found out that management of diarrhea (acute gastroenteritis) at home was grossly inadequate. We also found discrepancies in method of preparation and administration of ORT. This poses a major hurdle and challenge to effectively manage diarrhoeal disease at home. We also believe that use of antimicrobials in acute diarrhea should be strictly discouraged as it can lead to development of antimicrobial resistance and may even distract parent from providing standard care like use of rehydration therapy at home and zinc supplementation. We also conclude that health education to parents remains the cornerstone for success of home based management of acute diarrhoeal episode.

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