SUMMARY AND CONCLUSIONS

The study was an attempt to understand the patterns of home management of diarrhoea prevalent in the urban slum of Tigri. Childhood diarrhoea and its management were not perceived solely as medical problems. They were located within the given specificity of the socio economic context i.e., the urban slum where a migrant population from rural areas had settled and urban influences operated and interacted together with traditional beliefs and practices. Thus, to understand the various patterns of home management of diarrhoea and to assess the factors which account for their differences, the study utilized an approach in which the household management of diarrhoea was perceived as the outcome of multiple interacting environmental factors (physical, social and cultural). These social, economic and cultural factors were not treated as isolated entities but as an overlapping inter linked dynamic reality which was ever changing.

The main findings of the study can be summarized as follows:

* Life in this slum is characterized by low incomes, widespread illiteracy, migrant settlers from various states and occupations varying from rag pickers to class III employees of the government.

* Nearly one fifth of the households had at least one wasted child and almost half the households a stunted child. Of the
total children monitored over the year 33 (30.3%) were normal, 6 (5.5%) were wasted, 56 (51.4%) were stunted and 14 (12.8%) were both wasted and stunted at the beginning of the study. At the end of the study the percentage of stunted children rose to 56% and those who were stunted as well as wasted became 21.1%. The normal and wasted children declined to 18.3% and 3.7% respectively.

* Some of the major determinants of high level of malnutrition are the high diarrhoeal disease burden, low incomes of the households, illiteracy of mothers, low caste and cultural traits of domiciles of Bihar.

* The overall incidence of diarrhoea in under fives is 3.34 episodes per child per year. However, this epidemiological trend needs to be confirmed by a larger study.

* The socioeconomic factors related to high diarrhoeal attack rates are low household incomes, mothers illiteracy, lower caste and large family size. We thus found that both malnutrition and diarrhoea have common determinants.

* Peoples perceptions about causality and severity had the following critical features. Diarrhoea is perceived to be caused by a number of factors, predominantly based on the humoral theory of hot and cold
foods or climatic conditions. Teething, too frequent eating by children and eating foods that mothers consider inappropriate are considered the main causes of diarrhoea. The notion of contamination of food with germs or pathogens is absent and the role of malnutrition in high diarrhoea incidence is not perceived.

* Using the WHO definition of severity 89.7% episodes were categorized as severe. On the other hand, based on mothers perception of severity, 57.7% of episodes were characterized as severe.

* Among illness characteristics fever, anorexia, vomiting, watery stools, frequency of stools ≥ 7 in a day and illnesses lasting for more than 3-4 days are the triggers for concern.

* Diarrhoea is considered the second most common illness after febrile illnesses. However, it is considered the most serious illness by the highest proportion of the study population.

* The majority of mothers believe that early drug treatment can stop diarrhoea.

* The observed action of the people in diarrhoeal disease had the following main characteristics. Diarrhoea is the second most common illness for which
treatment is sought from outside the home.

* In nearly 60% of the episodes treatment is sought from outside the home.

* Treatment seeking is closely associated with higher income, literacy among mothers, perceived severity of illness, young age and male children.

* In episodes characterized as severe by the programme perspective, treatment is sought in 62% episodes. In episodes considered severe by mothers, treatment is sought in 76.8% episodes.

* Reasons for not seeking treatment in 38% episodes which should have sought treatment according to the WHO criteria were that 50% of these mothers considered the episode as mild, 15% felt repeated treatment was not worthwhile and in 35% there were various socioeconomic pressures. The critical finding here is that a significant number of recurrent diarrhoeal illnesses which cause nutritional depletion and require particular attention, do not seek treatment.

* Private sources of care are preferred and more widely used for giving more effective and prompt care. The very poor more often seek treatment from government sources as they cannot
afford the private ones.

* The physicians of all systems of medicine widely use antidiarrhoeal drugs and antimicrobials. Further, drugs used in dysentery (where therapy is useful) are often inappropriate.

* Physicians are largely responsible for reinforcing mothers desire to procure drugs for stopping diarrhoea and thereby contribute to the displacement of attention from fluids and feeding to drugs.

* Though over two thirds of the population have heard about ORT only less than one third of all diarrhoeal episodes are actually treated with ORT.

* Use of ORT is associated with exposure to mass media, higher family income and literacy of mothers.

* ORT is used more when mothers consider illness to be severe (33.9%) as against 18.7% use in mild episodes.

* Home available fluids and sugar salt solution are more commonly used compared to ORS packets as they are consonant with the community’s beliefs and do not need any added dependence on external sources.
Although awareness about cereal based fluids exists, physical constraints of fuel scarcity and its cost prevent their use.

In two thirds of episodes perceived severe by mothers ORT is not used.

The reasons for non use are lack of knowledge, a perception that it is ineffective and non endorsement by health care providers, even the practicing physicians.

A major reason underlying this non use is their understanding about ORT as a curative intervention and when it does not satisfy the need to stop the diarrhoea it is rejected as ineffective.

Though the understanding about dehydration and its seriousness is very poor in the majority of the mothers they are definitely concerned about symptoms such as weakness, irritability and poor acceptance of feeding. This study thus shows that there already exists an empirical basis for promoting the understanding of dehydration.

The use of ORT in the population is irregular and inconsistent. However use rates are definitely higher in severe compared to mild diarrhoeal episodes.
* The survey indicates that the concentration of sodium in the ORT prepared by mothers is more likely to be in the safe range of 40-90 meq if a litre of water is used.

* The doctors tend not to advocate the use of ORS packets; those who advise fluids do not adequately explain the preparation and mixing. Their own knowledge about the role of ORT lacks clarity.

* There is a widely shared perception that supplementary foods during the 6-12 month age groups are only required to familiarize the child or to prepare him for feeding at a later date. The low energy density of usual foods consumed in this community continues during diarrhoea and convalescence.

* Our findings highlight that the suboptimal food intake during diarrhoea is more a continuation of the deficiencies in usual infant and child feeding. Most mothers do make the usual or added effort to feed their children during diarrhoea.

* Apart from the usual deficiencies in feeding, anorexia rather than lack of maternal effort is the other important limiting factor in feeding during diarrhoea.

* The main problems in feeding practices are that there is very little exclusive breast feeding in the initial 4-5 months. Use
of additives which actually increase diarrhoea and mortality due to diarrhoea is common. This finding underlines the fact that the current complacency with regard to breast feeding is not justifiable.

In the light of these findings we offer the following criticisms and suggestions to the National Diarrhoeal Disease Control Programme.

The programme is based on the assumptions that:

i) Nearly two thirds of diarrhoea related deaths are caused by dehydration. It therefore aims to achieve use of ORT in 100% of diarrhoeal episodes.

ii) The adverse nutritional consequences of diarrhoea primarily arise because mothers with hold food during the illness; the programme therefore recommends to promote continued feeding during diarrhoea.

iii) Lack of knowledge about continuing feeding is the main factor underlying decreased food intake during diarrhoea.

iv) Because of the greater clinical efficacy of cereal based fluids the programme emphasizes on promotion of home available cereal based fluids for diarrhoeal patients.

This study along with others highlights the role of persistent diarrhoea and dysentery in diarrhoeal deaths in this setting and points out that apart from rehydration, management of persistent diarrhoea, dysentery and adequate feeding are equally critical in
reducing deaths due to diarrhoea. The fact that the non use of ORT in recurrent diarrhoea is significant underlines the seriousness of the complexity of this problem.

Our study also questioned the basis of the second and third assumptions of the programme. According to our findings the critical factor was not so much withholding of food by mothers or the lack of knowledge of continuing feeding but the economic constraints, which lead to feeding of low energy dense foods during diarrhoea.

Though the use of cereal based fluids is now widely suggested on the basis of scientific evidence, this study shows that in low income groups whose economic constraints are serious, it is much safer to promote fluids that do not need cooking.

The findings from this study also underline the fact that an intervention focussed on diarrhoeal cases considered severe by mothers has a much greater chance of success and can become a tool for education of mothers whose children have mild diarrhoea.

Our study indicates that there is a need for improving the educational component of the programme which needs to be more specific and in consonance with the present understanding of the people.

* Health education must explain physiological processes such as teething and the child's need for frequent feeds. The notion of contamination of foods in the causation of diarrhoea needs to be introduced.
* Hand washing must be promoted at the appropriate time to be maximally effective i.e. at the time of defaecation by mothers and the child and before feeding the child.

* There must be greater emphasis on proper mixing and use of ORT in optimal amounts and on all diarrhoeal days.

* Use of ineffective and unsafe fluids like glucose must be discouraged. Exclusive breast feeding and avoiding additives must be promoted.

* Use of cheaper, energy dense, locally available foods that are culturally acceptable beyond the age of 6 months must be encouraged.

* Greater emphasis must be laid on the promotion of increased feeding during convalescence and recovery from diarrhoea.

* Educational material for health professionals should attempt to improve their understanding of the use of ORT and correct mixing. It should discourage widespread use of antidiarrhoeals and antimicrobials and also promote the correct choice of drugs for use in dysentery. Our data show that the practitioners felt a lack of scientific information in this area.
A few organizational suggestions that can be made on the basis of our findings are:

* Uninterrupted availability of ORS at government health facilities.

* Strengthen referral services for the more severe cases of diarrhoea and provide adequate services.

* Government training programme must evaluate their content and improve upon it to increase the impact on the understanding of professionals.

There is a need to recognize the limits of the programme goals and strategy. Firstly, adoption of desired behaviour is constrained by low income, illiteracy, and lack of availability of food at affordable prices. If these circumstances continue to exist the rampant childhood malnutrition observed in this setting is unlikely to improve. Deaths due to diarrhoea largely occur in malnourished children. Mere promotion of fluid therapy is unlikely to prevent a significant proportion of these. Among the survivors the poor nutrition will still leave them vulnerable to deaths by other causes.

For the above reasons it is very important for the programme to recognize its limits. It must link itself with programmes that attempt to improve the availability of clean, potable water supply and a hygienic environment.
If the needs of the community are made the basis of the programme it will improve its functioning, as a need based programme evokes maximum participation and can be a powerful tool of health education as well.