International Journal of Contemporary Pediatrics
Barik KL et al. Int J Contemp Pediatr. 2019 Mar;6(2):615-620
http://www.ijpediatrics.com
pISSN 2349-3283 | eISSN 2349-3291

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20190698

Original Research Article

A qualitative study on experiences of mothers about control of diarrhoea of their children

Kanai Lal Barik[1], Uttam Kumar Paul[2]*

[1]Department of Pediatrics, Burdwan Medical College, Burdwan, West Bengal, India
[2]Department of Medicine, MGM Medical College and Hospital, Kishanganj, Bihar, India

Received: 10 December 2018
Accepted: 30 January 2019

***Correspondence:**
Dr. Uttam Kumar Paul,
E-mail: druttam131065@gmail.com

ABSTRACT

Background: Diarrheal disease poses a significant problem to the health, wellbeing and survival of children of less than five-year age group and is the second leading cause of mortality. Most of the deaths are due to dehydration and it can be preventable by proper and timely use of oral rehydration salt solution (ORS). There is lack of awareness among the mothers about the appropriate use of ORS during diarrhea of children. So, authors have tried to find out the experiences of the mothers about the management of diarrhea of their children.
Methods: The study is one of qualitative descriptive type involving 27 mothers of children who are suffering from diarrhoea in face to face in depth interviews (IDI).
Results: The mothers of children were within the age group of 21 to 34 years of age group. On the basis of qualitative data analysis, the present study shows the data related to childhood diarrhea can be classified under six themes. The themes are : 'Perception of the participant mothers about the diarrhea of their babies', 'Measures taken by the mothers to combat diarrhea at home', 'How Oral rehydration salt solution is applied by the mothers', 'How Oral rehydration salt solution is beneficial', 'How Oral rehydration salt solution is causing undesirable effects on the baby' and 'What additional measures taken to control diarrhea of the baby'.
Conclusions: There are several misconceptions and lack of awareness of the mothers about management of diarrhoea. However, it is possible to create awareness among them so that they can take all suitable measures to control diarrhoea.

Keywords: Diarrhoea, Experience, Mother, Qualitative study

INTRODUCTION

Acute diarrheal disease which is manifested as passage of three or more liquid stools per day is the second leading cause of mortality among the children of less than five years age group.[1] Almost all the deaths of diarrheal disease are due to dehydration and it can be prevented by proper and timely use of oral rehydration salt solution (ORS). Oral rehydration therapy (ORT) has been developed for more than four decades and established as the standard therapy for the correction of dehydration and metabolic acidosis associated with acute diarrheal disease.[1,2]

A wide variety of viral, bacterial and protozoan pathogens are the causative agents of diarrheal diseases.[3] Risk factors for diarrhea are multi-factorial and it is well recognized that the occurrence of diarrheal disease is affected by several socio-economic, environmental and behavioral factors.[4] Most of the diarrheal diseases are due to unsafe water supply, inappropriate sanitation and improper hygiene.

More than 90% of deaths from diarrheal disease in children under five years old in developing countries occur due to unsafe water and sanitation problems. Improvement of drinking water supply through water treatment by chlorination can decrease the incidence of diarrheal diseases by 35-39%.[5] Suitable hygiene education and proper hand washing can decrease the incidence of diarrhea by up to 45%.[6] In India, diarrheal disease poses a significant problem to the health, wellbeing and survival of children of less than five-year age group. It has a deleterious effect on growth and predisposes the child to malnutrition and other infections.

The use of oral rehydration salt solution (ORS) has been attributed as the primary reason for the substantial reduction in morbidity and mortality of acute infectious diarrhea. Despite these enormous successes ORS is not applied by the mothers to the extent that one would expect. There is lack of awareness among the mothers about the appropriate use of ORS during diarrhea of children.[7] Therefore; authors have tried to find out the experiences of the mothers about the management of diarrhea of their children through a qualitative in-depth interview method.

METHODS

The study was conducted in the Pediatrics Department of a tertiary Medical College, West Bengal. The study was one of qualitative descriptive type involving in depth face to face interviews (IDI) of 27 mothers of children who were suffering from diarrhea with dehydration and were initially treated with oral rehydration salt solution. Participant mothers were selected purposively and requested to participate in the study. All the interviews of the mothers were conducted after taking consent by the first author. The first author was enlightened about the in-depth interview (IDI) methods by the second author who was trained in "qualitative methods in health research". Before the beginning of the study a structured questionnaire was prepared by the authors after thorough literature review. All the mothers were well informed about the purpose of the study before the interview. All the interviews were conducted in a convenient place in presence of a lady nurse and each of the interview lasted for 11 to 15 minutes. No repeat interview was conducted. All the interviews were conducted in Bengali language which is the native tongue of the participants. Non-participants were not allowed to remain while conducting the interview. Thorough handwritten notes were taken while conducting the interview which was verified by the participant after the completion of the interview. No audio and video recording were taken. The data collection process continued until a saturation level was achieved (no new information was present). The interviews were then translated and typed into English. The data analysis was performed manually by deductive approach by the second author. Descriptive 'codes' of the text information were done. Then 'themes' were formed by merging similar codes together. The consolidated criteria for reporting qualitative research guidelines were followed. All the questions used during the interview were open ended. Before beginning the study, formal approval was taken from the Institutional Ethical Committee (IEC) of the institution. The script was written by the second author and reviewed and revised by the first author. Finally, the script was prepared for publication.

RESULTS

Demographic profile of participants

The mothers of children who had participated in the study were within the age group of 21 to 34 years of age group. 11 participant mothers were in the age group of 21 to 24 years, 8 were in the age group of 25 to 28 years, 5 were within 29 to 32 years and 3 were in the age group of 33 to 35 years. The age group of the children with diarrheal diseases varied from 6 months to 5 years. Of which 5 children (3 male and 2 female) were in the age group of 6 months to 1 year. Total 9 children (4 male and 5 female) were in the age group of 1 year to 2 years. 8 children (5 male and 3 female) were in the age group of 2 years to 3years. 5 children (3 male and 2 female) were in the age group of 3 years to 4 years.

Regarding education status of the mothers of children with diarrheal diseases, 9 mothers had primary level of education, 8 mothers had upper primary level of education, 5 had Madhyamik level, 4 had higher secondary level and one mother was graduate. Regarding housing condition, 10 lived in mud houses and 12 lived in the pucca houses and 5 lived in partly mud, partly pucca houses.

Perception of the participant mothers about the diarrhea of their babies

Watery stool

Almost all of the mother’s views were that when the babies passed watery stool they were suffering from diarrhea. One mother said, "My baby is passing water like stool."

Mustard oil color stool

Most of the mother stated that when their babies passed mustard oil color stool, they understood that their babies were suffering from diarrhea. Comment of one mother “the color of the stool of my baby is like the color of mustard oil".

Increased frequency of stool

Participant mothers told that when the frequency of passing of stool was more, the baby was suffering from diarrhea.

Stool mixed with blood

A few of the mothers uttered that when their babies passed stool mixed with blood, they understood that their babies were suffering from diarrhea. "The stool of my baby is mixed with blood": comment of a mother.

Curd like stool

A few of the mother said that when their babies passed curd like stool, they felt that their babies were suffering from diarrhea.

Cry during passage of stool

Participant mothers expressed that when the babies were crying during passage of stool, they understood that babies are suffering from diarrhea.

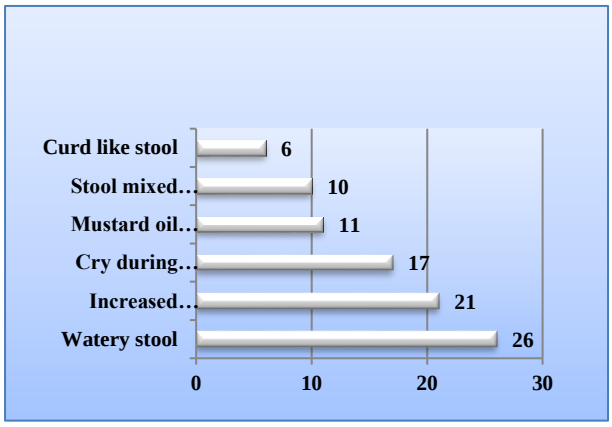

Figure1: Perception of mothers about diarrhoea of their babies.

Measures taken by the mothers to combat diarrhea at home

Oral rehydration salt solution

Most of the mothers expressed that they had applied oral rehydration salt solution to their babies during diarrhea.

Sugar and salt solution

Most of the mothers opined that they had applied sugar with salt solution to their babies during diarrhea.

Puffed rice mixed with sugar and salt

Most of the mothers told that they had used puffed rice mixed with sugar and salt solution to their babies during diarrhea.

Sago, Barley and Sujee solution

A few of the mother stated that they had given Sago or Barley or Sujee solution to their babies during diarrhea.

Green coconut water

A few of the mother said that they had given green coconut water to their babies during diarrhea.

Honey

A few of the mother told that they had used honey to their babies during diarrhea.

Sugar water

A few of the mother told that they had used sugar water to their babies during diarrhea.

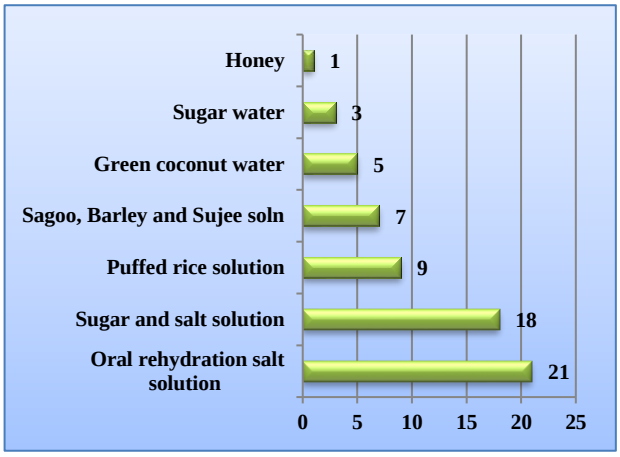

Figure 2: Measures taken to combat diarrhoea of babies at home by the mothers.

How oral rehydration salt solution is applied by the mothers

Time interval

A few mothers had applied oral rehydration salt solution (ORS) every five minutes interval, a few of them had applied it every ten to fifteen minutes interval.

Volume of stool

A few of the mothers mentioned that they had applied oral rehydration salt solution by observing the volume of stool.

Volume of urine

A few of the mothers stated that they had applied oral rehydration salt solution by observing the volume of stool.

Willingness to drink

A few of the mothers stated that they had applied oral rehydration solution by noticing willingness of the baby to drink ORS.

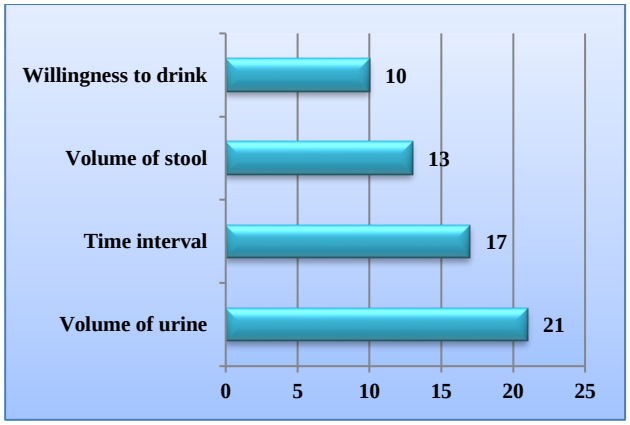

Figure 3: The factors which guided the mothers to apply ORS to babies during diarrhoea.

How oral rehydration salt solution has been beneficial to the affected children

Decreased frequency of stool

Most of the mothers commented that after application of oral rehydration salt solution (ORS) there was decreased frequency of loose motions.

Increased volume of urine

Most of the mothers stated that after application of oral rehydration salt solution there was increased volume of urine.

Baby looks active

Most of the mothers said that after application of oral rehydration salt solution the babies looked active.

Easy to prepare

A few of the mothers told that oral rehydration salt solution was easy to prepare and apply.

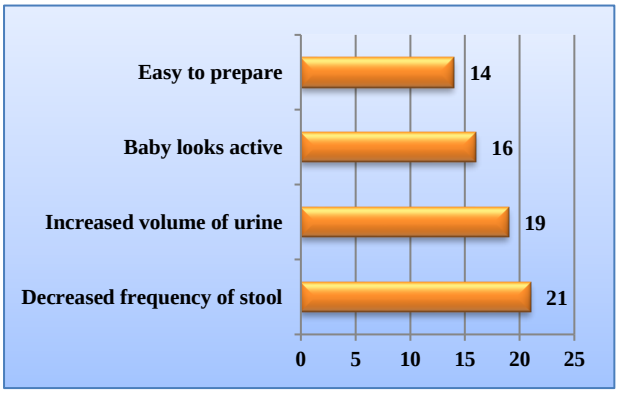

Figure 4: How ORS has been beneficial in diarrhea of babies.

How oral rehydration salt solution is causing undesirable effects on the baby?

Diarrhea increased

After application of oral rehydration salt solution (ORS) there was increased volume of watery stool. Comment of one mother, volume of stool increased after using ORS, my baby is passing a greater number of stools.

More vomiting

There were more bouts of vomiting after application of oral rehydration salt solution. One statement is, more vomiting after drinking of ORS and belly of the baby is full

Less appetite

My baby is not taking any food, it is a comment of one mother.

Fullness of belly

There was fullness of belly of the baby after drinking of ORS.

Causing irritation

Baby became irritable after taking ORS and he did not like to drink it.

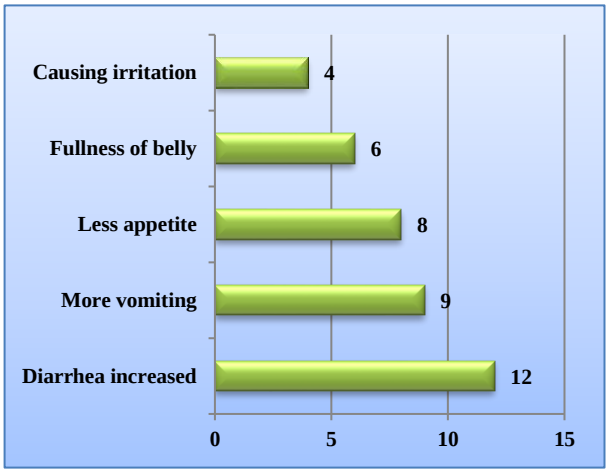

Figure 5: How ORS is causing undesirable effects of the babies suffering from diarrhea.

Other measures taken to control diarrhea

Antibiotics

Most of the mothers had applied Antibiotics along with oral rehydration salt solution to control diarrhea of the babies.

Zinc preparation

Most of the mothers had given zinc preparation along with oral rehydration salt solution to control diarrhea of the babies.

Pro-biotic

A few of the mothers had applied Pro-biotic along with oral rehydration salt solution to control diarrhea of the babies.

Anti-diarrheal

Very few mothers had applied zinc preparation along with oral rehydration salt solution to control diarrhea of the babies.

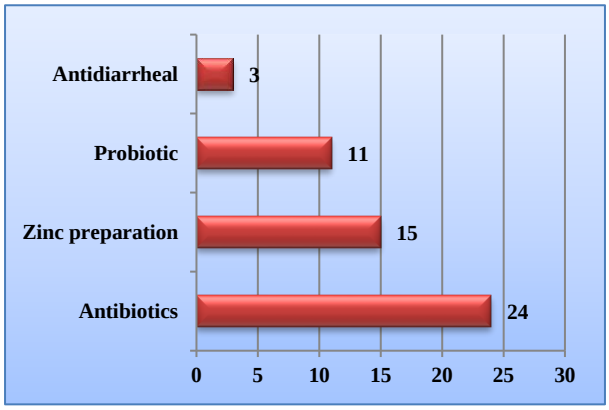

Figure 6: Other measures taken by mothers to control diarrhea of babies at home.

DISCUSSION

On the basis of data analysis, the present study shows that the data regarding childhood diarrhea can be classified under six themes. The themes are : 'Perception of the participant mothers about the diarrhea of their babies', 'Measures taken by the mothers to combat diarrhea at home', 'How Oral rehydration salt solution is applied by the mothers', 'How Oral rehydration salt solution is beneficial', 'How Oral rehydration salt solution is causing undesirable effects on the baby' and 'What additional measures have been taken to control diarrhea of the baby'.

Regarding "perception of the participant mothers about the diarrhea of their babies" it has been found that 26 mothers perceived diarrhea as a passage of loose stool, 21 mothers as increased frequency of passage of stool, 17 mothers as cry of the baby during passage of loose stool, 11 mothers as passage of stool like mustard oil color, 10 mothers as blood mixed with stool and 6 mothers as passage of curd like stool.

As for the, 'measures taken by the mothers to combat diarrhea at home', 21 mothers have informed that they had applied oral rehydration salt solution to control diarrhea of their babies at home, 18 mothers had applied sugar and salt solution, 9 mothers puffed rice with salt and sugar solution, 7 mothers sago, barley and sujee solution, 5 mothers green coconut water, 3 mothers sugar solution and only one mother had applied honey.

In response to the question, "How you apply oral rehydration salt solution to your baby during diarrhea?" twenty one (21) mothers said that they had applied ORS by observing volume of urine of the baby, 17 mothers said that they applied ORS in every five to fifteen minutes interval, whereas 13 mothers told that they applied ORS by observing the stool volume of the baby and 10 mothers told that they used ORS by noticing the willingness of the baby to drink ORS.

In responses to the question, "How Oral rehydration salt solution has been beneficial to the affected children?", 21 mothers stated that application of ORS decreased the frequency of the stool, 19 mothers stated that it increased volume of the urine, 16 mothers stated that baby looked active and 14 mothers stated that ORS was easy to prepare and use.

When the mothers were asked about the undesirable effects of ORS, 12 mothers said that it increased the frequency and volume of loose motion, 9 mothers said that it increased vomiting, 8 mothers said that it decreased the appetite of the baby, 6 mothers said that it caused fullness of the abdomen and only 4 mothers said that use of ORS caused irritability of the baby.

In reply to the query, "What other measures you have taken to combat diarrhea of the baby?", 24 mothers replied that they had used antibiotic medicines prescribed by local doctors, 15 mothers stated that they had applied zinc preparation along with antibiotics, 11 mothers said that they had used pro-biotic medicines along with antibiotics and 3 mothers told that they had applied anti-diarrheal medications to control diarrhea of their babies.

A qualitative study conducted by Yalew E et al, in Assosa District, West Ethiopia, had included 72 participants of whom majority were caregivers of children. The author had conducted interviews and focus group discussions. Principal themes of the study were: perception of childhood diarrhea as a common childhood disease, homemade management of diarrhea, traditional management of childhood diarrhea and communication media as a source of information about childhood diarrhea'. It has been found that the participants had applied medications prepared from different roots of different trees. These medications might lead children to severe complications including death as it did not provide the opportunity to get modern treatment.[8]

Another study conducted by Njeru MP et al, in Kenya included a total of 366 mothers. The authors had found that 79 percent mothers attended hospital for treatment of diarrhea of their children whereas 17 percent of mothers

treated their children at home with home-made remedies. 64 percent of those mothers who had attended hospital used ORS to control diarrhea of their children.[9] In the present study most of the mothers (21 out of 27) had applied ORS to control diarrhea of their children. The authors of another study about oral rehydration therapy had shown that 65.9 percent parents (313 out of 475) had used ORS during recent diarrheal episode of their children and 34.8 percent parents had perceived that ORS was intended to treat diarrhea and prevent dehydration.[10] In the present study most of the mothers (21 out of 27) had stated that ORS use had decreased the frequency of the stool of their children.

It is well known that most of the childhood diarrhea is caused by viruses specifically rotaviruses in which antibiotics have no role but in the present study twenty four out of twenty-seven mothers told that they have applied antibiotics prescribed by local doctors. It has been observed that Zinc (Zn) supplementation in diarrheal diseases resulted in a 12-25% reduction in acute diarrhea.[7,11] Zinc could increase water and sodium (Na) absorption and/or inhibit water and chloride secretion in gut.[12] In the present study fourteen out of twenty-seven mothers had expressed that they had used zinc preparation to control diarrhea of their babies.

CONCLUSION

The present study is a qualitative research performed through in-depth interviews of mothers whose children were suffering from diarrhoea. Authors have found several misconceptions and lack of awareness of the mothers about management of diarrhoea. However, it is possible to create awareness among them about the misconceptions regarding control of diarrhoea of their children. More vigorous and persistent efforts are needed to make all the mothers aware and to improve the health status of the children of the society.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Sood N, Wagner Z. Private sector provision of oral rehydration therapy for child diarrhea in Sub Saharan Africa. Am. J. Trop. Med. Hyg.2014;90(5):939-44.
2. Spandorfer PR, Alessandrini EA, Joffe MD, Localio R, Shaw KN. Oral Versus Intravenous 2005;115:295-301.
3. Alelign T, Asegidew W, Abera A. A cross sectional study on the incidence and risk factors of diarrheal illness among children under-five years of age in Debre Berhan town, Ethiopia. J Health Med Econ. 2016;2(2).
4. Halder AK, Tronchet C, Akhter S, Bhuiya A, Johnston R, Luby SP. Observed hand cleanliness and other measures of handwashing behavior in rural Bangladesh. BMC Public Health. 2010;10(1):545.
5. Huffman SL, Combest C. Role of breast-feeding in the prevention and treatment of diarrhoea. J Diarrhoeal Dis Res. 1990:68-81.
6. Njeru PM, Kariri JM, Murigi MW, Waweru HM, Muriithi FM. Management of diarrheal diseases among children under five years: a case study of mothers at Kakamega county, Kenya. Int J Community Med Public Health. 2017;4(8):2762-6.
7. Binder HJ, Brown I, Ramakrishna BS, Young GP. Oral rehydration therapy in the second decade of the twenty-first century. Current Gastroenterol Reports. 2014;16(3):376.
8. Yalew E. A qualitative study of community perceptions about childhood diarrhea and its management in Assosa District, West Ethiopia. BMC Public Health. 2014;14(1):975.
9. Njeru PM, Kariri JM, Murigi MW, Waweru HM, Muriithi FM. Management of diarrheal diseases among children under five years: a case study of mothers at Kakamega county, Kenya. Int J Community Med Public Health. 2017;4(8):2762-6.
10. Essomba NE, Koum DK, Adiogo D, Ngwe MI, Coppieters Y. Use of oral rehydration therapy in the treatment of childhood diarrhoea in Douala, Cameroon. Malawi Med J. 2015;27(2):60-4.
11. Sazawal S, Black RE, Bhan MK, Bhandari N, Sinha A, Jalla S. Zinc supplementation in young children with acute diarrhea in India. New England J Med. 1995;333(13):839-44.
12. Hoque KM, Sarker R, Guggino SE, Tse CM. A new insight into pathophysiological mechanisms of zinc in diarrhea. Annals New York Academy Sci. 2009;1165(1):279-84.

Cite this article as: Barik KL, Paul UK. A qualitative study on experiences of mothers about control of diarrhoea of their children. Int J Contemp Pediatr 2019;6:615-20.