



Original Research Article

Barriers towards the Practices of Oral Rehydration Therapy in the Management of Diarrhoea among the Mothers of Under Five Children pediatric outpatient department of Guwahati Medical College and Hospital, Assam

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ABSTRACT

Introduction with Objectives: Diarrheal diseases rank among the “to three” causes of pediatric death of the developing world. Dehydration is the most common cause of death in it. The objectives of the study were -to identify the practices, barriers to practice of oral rehydration therapy and its mutual association and association with some selected demographic variables like age, education, occupation, religion, type of community and family income .

Methods and Materials: A descriptive survey approach and design was used for the study. Convenience non probability sampling technique was used to collect data from 113 mothers of the underfive children attending the paediatric outpatient department of Guwahati Medical College and Hospital, Assam. Data's were collected by a structured interview schedule.

Result and Analysis: The assessment was done by descriptive statistics. It revealed barrier scores like knowledge barrier (M=2.4, SD=.68), practice barrier (M=4.06, SD=1.91), socio-cultural barrier (M=2.4, SD=.68), Access barrier (M=0.31, SD=0.91), and financial barrier (M=1.72, SD=2.46). The study findings shows strong association of practice level with age (chi square= 61.54; df=6, p<0.01), education (chi square= 77.53; df=6, p<0.01) and family income (chi square= 84.05; df=6, p<0.01). There is strong association of knowledge barrier (chi square= 9.5; df=3, p<0.01), practice barrier (chi square= 13.01; df=6, p<0.01) and socio-cultural barrier (chi square= 57.53; df=3, p<0.01) with the level of practice of ORT by the mothers.

Discussion & Conclusion: 55% of mothers strongly agreed that while practicing ORT their child vomits or had feeling of nausea and the dislikes of taste of ORS are some barriers towards practice of ORT. 31% of mothers believed other traditional method more effective than ORT which is also a moderate barrier to practice ORT. 32 % of mothers said that the cost of ORS is high for them to afford for which they go for traditional method. Therefore strategies should be made to reduce the emetic factor and also to add a good taste in ORS, to reduce cost for increasing its practice.

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1. Introduction

Diarrheal diseases rank among the “top three” causes of death in pediatric population of the developing world. Globally, approximately 4-5 million deaths occur as a result of diarrheal diseases every year. Eight out of 10 deaths are in the first 2 years of life which is the most susceptible period

for malnutrition. Almost 500 million children suffer from acute diarrhea annually of them 5 million children die due to acute diarrhea every year.¹

In developing countries, children under three years old experience on average three episodes of diarrhea every year. Each episode deprives the child of the nutrition necessary for growth. As a result, diarrhea is a major cause of malnutrition, and malnourished children are more likely to fall ill from diarrhoea.²

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1.1. Dehydration

The most severe threat posed by diarrhea is dehydration. During a diarrheal episode, water and electrolytes (sodium, chloride, potassium and bicarbonate) are lost through liquid stool, vomit, sweat, urine and breathing. Dehydration occurs when these losses are not replaced. It is the most common cause of death in diarrheal diseases.

Death can follow severe dehydration if body fluids and electrolytes are not replenished, either through the use of oral rehydration salts (ORS) solution, or through an intravenous drip.

Early oral rehydration therapy can prevent and reverse dehydration from diarrhea in all most all cases. In early dehydration (during the first two days) fluid loss is derived from both the extra cellular fluid and intra cellular fluid because the increased osmolarity of the diminished extra cellular fluid volume causes loss of fluid from the intra cellular fluid compartment. As dehydration becomes chronic, the cellularity becomes greater.³

Ancient civilizations in India and china made use of sugar and starch solutions to treat dehydration. Oral rehydration solution make use of the ability of glucose, to increase the re absorption of fluid and salts into the intestinal wall.⁴

Oral rehydration therapy (ORT) is a simple, inexpensive, and effective therapy; ensuring that it is widely available and widely used is a major public health challenge. WHO and UNICEF, as well as numerous international, bilateral, and voluntary agencies, are now collaborating with many countries in establishing national primary health care services which include diarrheal disease control programmes with ORT as their cornerstone. As more and more experience is gained with ORT, the best types of solution to use in different situations are becoming clearer.

The joint statement of WHO and UNICEF deals in particular with scientific, programmatic, and operational issues in relation to ORT which are important in the development and strengthening of national diarrheal disease control programme. Operational guidelines would need to address many other issues, such as the provision of information to a wide range of audiences, the training of health and other workers at various levels, the nutritional aspects of diarrhea management and prevention, and the use of water supply and sanitation facilities and good hygiene practices.⁵

Globally, an estimated 1.8 billion cases of childhood diarrhea are reported which is responsible for more than three million underfive children deaths annually.⁶

According to NFHS-3 60% of diarrheal cases taken to health facility or provider and among them 39% received oral rehydration therapy and more than one quarter of the population did not received any kind of treatment. Nearly three-quarters of women know about ORS packets (up from 43% in NFHS-1 and 62% in NFHS-2) However, use of ORS

is low and virtually unchanged since NFHS-2. Moreover Assam falls under the category of lowest use of ORS in the treatment of diarrhea for under five children having 15% population of using it.

The present study will assess the barriers to practices of oral rehydration therapy in the management of diarrhea among the mothers of underfive children attending pediatric OPD in Gauhati Medical College and Hospitals. Also, an attempt will be made in this study to find out the mutual association between the practices and the barriers towards the practices of oral rehydration therapy among the mothers of underfive children.

1.2. Objectives of the study

The objectives of the study were to:

1. Identify the practices of oral rehydration therapy in the management of diarrhoea among the mothers of the underfive children attending the pediatric outpatient department of Gauhati Medical College and Hospital, Assam.
2. Determine the barriers towards the practices of oral rehydration therapy in the management of diarrhoea among the mothers of underfive children.
3. Find out the association between the barriers and the practices of oral rehydration therapy among the mothers of underfive children.
4. Find out the association between the practices of oral rehydration therapy and some selected demographic variables e.g. age, education, occupation, religion, type of community and family income.
5. Find out the association between the barriers towards the practices of oral rehydration therapy and some selected demographic variables e.g. age, education, occupation, religion, type of community and family income.

2. Materials and Methods

This descriptive study was used to gain more information about the characteristics within a particular field of study.

In order to achieve the objectives of the study a descriptive approach was adopted for assessment of the barriers towards the practices of oral rehydration therapy in the management of diarrhoea among the mothers of underfive children attending pediatric out- patient department of Gauhati Medical College and Hospital, Guwahati, Assam.

2.1. Research design

The research design is the master plan specifying the method procedures for collecting and analyzing the needed information in a research study.

Descriptive survey design was used for the present study. Survey is the type of research design in which self reported data are collected from a sample to determine the characteristics of a population.

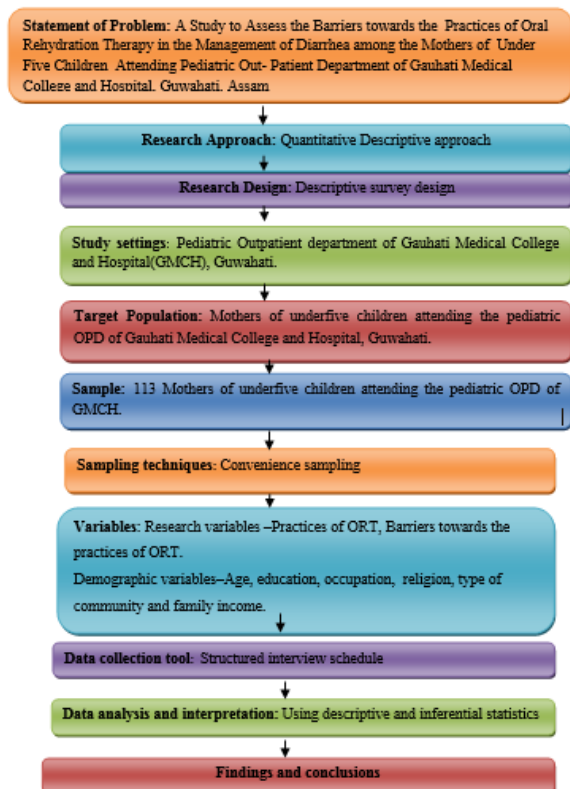


Fig. 1: Schematic design of the study.

2.2. Setting of the study

The study was conducted among the mothers of underfive children attending Pediatric outpatient department of Gauhati Medical College and Hospital, Guwahati Assam. Gauhati Medical College and Hospital is located at Bhangagarh sub locality, GMCH road, district Kamrup, Assam.

The GMCH runs academic pursuits, patient care and is a referral centre for speciality and super speciality treatment. The setting was conveniently selected because of the feasibility of the study.

2.3. Population

Population is the set of people or entities to which the result of the researcher are to be generalized.

The target population comprised of mothers of the underfive children attending pediatric outpatient department of Gauhati Medical College and Hospital, Guwahati Assam.

2.4. Sample and Sampling size

Sample is the representative of the target population which is to be worked upon by researchers during study. Sample for this study was 113 mothers of the underfive children attending pediatric outpatient department of Gauhati Medical College and Hospital, Guwahati Assam.

The sample size was determined using Fisher et al formula

$$n = \frac{Z^2pq}{d^2}$$

Is the desired sample size

Is the standard normal deviate at 95% confidence interval (Z= 1.96).

Is the proportion in the target population estimated to have the characteristics being measured

In this study it is the prevalence of diarrhoea among children under 5 years in Assam according to NFHS-3(2005-06) is 8%.

q is the people in the target population estimated not to have the characteristics being measured.

$$(q=1-P),$$

Is the level of precision at 95% confidence interval which was set at (0.05).

$$n=(1.96)^2 \times 0.08(1-0.08)/(0.05)^2=113$$

2.5. Sampling technique

Convenience sampling technique was used for the study. Convenience sampling technique is a non probability sampling technique where subjects are selected due to their convenient accessibility and proximity to the researcher.[52] In this sampling technique 113 mothers of underfive children are selected from those attending paediatric outpatient department of Gauhati Medical college and Hospitals.

2.6. Inclusion criteria

1. Mothers of underfive children attending the pediatric OPD in GMCH.
2. Mothers of underfive who were willing to participate.
3. Mothers of underfive who were available during data collection period.

2.7. Exclusion criteria

1. Mothers of underfive children who did not understand Assamese or English.
2. Mothers of critically ill underfive children.

2.8. Development of the tool

Tool was developed based on conceptual framework and objectives of the study. It was developed from the review of related literature, investigator's personal experience, based on the consultation of expert's opinion, content validity

of the experts, pretesting of the tool and establishing the reliability.

2.9. Content Validity of the Tool

Validity refers to the degree to which an instrument measures what it is supposed to measure. (Polit and Hungler).⁵²

To ensure the content validity of the structured interview schedule, objectives of the study, interview schedule along with its blueprint and scoring key and criteria checklist for validation were submitted to 10 experts- 1 experts Matron Bai Jerbai Wadia Hospital for Children, Mumbai, 4 experts from Child Health Nursing, 2 experts from deptt. of Pediatric Medicine, GMCH, 3 from Neonatology deptt of Bai Jerbai Wadia Hospital for Children. They were requested to evaluate and validate the prepared items for their relevancy, adequacy and appropriateness. Minor modifications were made on the basis of recommendations, suggestion of experts with consultation of guide.

Language validity: Initially the tool was prepared in English version and then translated into Assamese. The Assamese version was validated by experts, modifications were made as per the suggestion of experts.

2.10. Reliability

The Karl Pearson's product moment Correlation coefficient between halves was the basis of split half reliability by using Spearman Brown Prophecy formula. This study was conducted on 10 mothers with 18 items on barriers and 11 items on the practices and in total 29 items is combined for reliability analysis. The Spearman Brown Split half reliability was found $r = 0.774$.

2.11. Description of the tool

After reviewing literature, discussion with the experts and with the investigator's personal and professional experience, structured interview schedule was prepared to assess the barriers towards the practices of oral rehydration therapy. The tool consists of three parts-I, II, III and it is described as follows:

Part I: This section was prepared to collect the demographic variables of the respondents which include age in years, education, occupation, religion, type of community and family income.

Part II: A checklist was prepared to assess the practices of oral rehydration therapy in the management of diarrhea among the mothers of underfive children having yes/no categories in the response which were scored as given bellow-

1. Yes=1
2. No=0

11 items were included in the checklist. The minimum score on practices was 0 and maximum score was 11. Out of which the practices score was statistically categorized as Poor (less than 4), Average (4-6), Good (more than or equal to 7) by using the formula as:

So the total range of score will be 0-11. Interpretation of the score will be done as follows:

Level of practice	Range of score
Poor : < (Mean – SD)	<(5.03-1.02=4.01)=0-3
Average: Between Mean – SD & Mean + SD	(between 4.01 & 6.05)=4-6
Good: > Mean + SD	>(5.03+1.02=6.05)=7-11

Part III: This section was prepared to assess the barriers towards the practices of oral rehydration therapy. Part III includes a 3 point Likert scale which was divided into 5 sub-headings mainly Knowledge barrier, Practice barrier, socio-cultural barrier, access barrier and financial barrier. Under knowledge barrier 5 items, under practice barrier 3, under socio- cultural barrier 4, under access barrier 3 and under financial barrier 3 items were included. Total 18 items on the above sub-headings were prepared. In each items there were 3 responses. "Agree", "Uncertain" and "Disagree" and which were scored as given below:

1. Agree=3
2. Uncertain= 2
3. Disagree = 1

The total score ranges in each subheadings were as follows-

Knowledge barrier: 0-15

Practice barrier: 0-9

Socio- cultural barrier: 0-12

Access barrier: 0-9

Finance barrier: 0-9

Interpretation of the score will be done as follows:

2.12. Pilot Study

A pilot study is a miniature version of the planned research, to identify and correct problems which could affect the research process.[52]

It is a trial run designed to test the methods to be used in a larger, more rigorous study which is sometimes referred to as the parent study.

After obtaining formal administrative approval, the pilot study was conducted on 8th and 9th August 2015 at pediatric out-patient department of Gauhati Medical College and hospitals and 10% of total sample size was selected. i.e 15 mothers were selected by convenience sampling technique.

The pilot study was aimed at identifying the practices of oral rehydration therapy, determining the barriers towards practices, finding out the association between the barriers and the practices of oral rehydration therapy, finding

Barrier	Range of score	Percentage (%)
Knowledge Barrier		
High	11-15	75-100
Moderate	5-10	30-74
Low	0-4	0-29
Practice barrier		
High	7-9	75-100
Moderate	3-6	30-74
Low	0-2	0-29
Socio-cultural Barrier		
High	9-12	75-100
Moderate	4-8	30-74
Low	0-3	0-29
Access Barrier		
High	7-9	75-100
Moderate	3-6	30-74
Low	0-2	0-29
Financial Barrier		
High	7-9	75-100
Moderate	3-6	30-74
Low	0-2	0-29

the association between the practices of oral rehydration therapy and some selected demographic variables and finding the association between the barriers towards the practices of oral rehydration therapy and some selected demographic variables in the management of diarrhoea among the mothers of the under five children attending the paediatric outpatient department of Guwahati Medical College and Hospital, Assam.

Data was collected by the investigator herself through interviewing the mothers. The purpose of the study was explained and an informed consent was obtained from each participant.

Study was conducted and subjects were interviewed on 8th and 9th August 2015. Data collected were tabulated, analyzed and statistically calculated. Findings of the pilot study revealed that it was feasible to conduct the study. The study design remains the same for final data collection.

2.13. Ethical Consideration

1. Ethical approval was obtained from the Institutional Ethical Committee of Regional College of Nursing.
2. Informed consent was taken from the participants before collecting the data.
3. Full confidentiality of the information collected was ensured.
4. Anonymity of the respondent was maintained by using a coded number instead of their name.

2.14. Procedure for data collection

Data collection is the precise, systematic gathering of information relevant to the research purpose of the specific

objectives, questions or hypothesis of the study.

Data collection for the research study was scheduled from 2nd February 2016 to 17th February 2016 with prior written permission from the Medical Superintendent of Gauhati Medical College and Hospitals. 113 mothers of under five children were selected by using convenience sampling technique. The study was carried out in the pediatric out- patient department of Gauhati Medical College and Hospital. The investigator introduced herself to the participants. The purpose of the study was explained and an informed consent was obtained from each participant and assurance was given to maintain confidentiality about the study. In one day about 15 samples were taken.

The participants were interviewed by the investigator with the help of the tool. It took around 15 minutes in taking interview of one participant. The data collection procedure had been terminated by giving thanks to the respondents.

2.15. Plan for data analysis

Data analysis was conducted to reduce, organize and give meaning to the data. The analysis of data was based on the objectives by using descriptive and inferential statistics.

The plan for data analysis was as follows:

Section I: Demographic variables will be computed in terms of frequency and percentage distribution.

Section II: The level of practices of oral rehydration therapy will be computed in terms of frequency and percentage distribution.

Section III: The barriers towards the practices of oral rehydration therapy will be computed in terms of frequency and percentage distribution.

Section IV: Chi-square test will be computed to find out association between the barriers and practices of oral rehydration therapy.

Section V: Chi-square test will be computed to find out association between the practices of oral rehydration therapy and selected demographic variables.

Section VI: Chi-square test will be computed to find out association between the barriers towards the practices of oral rehydration therapy and selected demographic variables.

3. Results and Discussion

The findings of present study shows that majority 72(63.3%) of the mothers have good level of practice, 17(15%) of mothers have average level of practice and 24(21.2%) mothers have poor level of practice of ORT in the management of diarrhea. The present study shows that 62(54.9%) mothers have high practice barrier, 35(31 %) mothers have moderate socio-cultural barrier and 36(31.9%) have high financial barrier. The investigator concluded that barriers related to knowledge, practice and socio-cultural believes has significant association with the level of

practices of ORT by the mothers.

3.1. Section I: Description of the study variables in frequency and percentage distribution.

The demographic characteristics of the sampling unit under consideration are represented in tabular form in the section.

Table 1: Frequency and Percentage Distribution of Mothers according to Age n=113

Characteristics	Range	Frequency(f)	Percentage (%)
Age (in years)	<18	2	1.8
	18-24	43	38
	24-30	66	58.4
	>30	2	1.8
	Total	113	100.0

The data presented in Table 1 shows that maximum number i.e. 66(58.4%) of the population under study belonged to the age group 24-30 years of age, 43(38%) belonged to the age group 18-24 years, 1.8% were of less than 18 years of age and remaining 2(1.8%) were more than 30 years of age.

Table 2: Frequency and Percentage Distribution of Mothers according to Education n=113

Characteristics	Range	Frequency(f)	Percentage (%)
Education	Illiterate	31	27.4
	Can read and write	–	–
	Primary School	12	10.6
	Middle School	–	–
	High school	–	–
	Higher Secondary	65	57.5
	Graduate and above	5	4.5
	Total	113	100.0

Table 2 shows distribution of mothers according to their education. It is observed that majority i.e. 65(57.5%) mothers had education up to secondary level, 31(27.4%) mothers are illiterate, 12(10.6%) have primary level education and 4.5% mothers have college level education.

The data depicted in Table 3 shows that majority i.e 111 (98.2%) of mothers are housewives, 2 (1.8%) are private employee.

From the Table 4 it is observed that majority i.e 108(95.6%) of the mothers were Hindu and 5(4.4%) were Muslim.

The data depicted in the table-5 shows that majority of the mothers i.e. 72 (63.7%) belongs to Bengali community,

Table 3: Frequency and Percentage Distribution of Mothers according to Occupation n=113

Characteristics	Classification	Frequency(f)	Percentage (%)
Occupation	Housewife	111	98.2
	Government Employee	–	–
	Private Employee	2	1.8
	Bussiness Worker	–	–
	Total	113	100.0

Table 4: Frequency and Percentage Distribution of Mothers according to Religion n=113

Characteristics	Classification	Frequency	Percentage
Religion	Hindu	108	95.6
	Muslim	5	4.4
	Christian	–	–
	Others	–	–
	Total	113	100.0

Table 5: Frequency and Percentage Distribution of mothers according to Type of Community n=113

Characteristics	Classification	Frequency(f)	Percentage (%)
Community	Assamese	11	9.7
	Bengali	72	63.7
	Nepali	1	.9
	Others	29	25.7
	Total	113	100.0

11(9.7%) from Assamese community, 1(.9%) is from Nepali community and 29 (25.7%) from others (i.e. Bihari, Marwari, Panjabi)

Table 6: Frequency and Percentage Distribution of mothers according to Family Income n=113

Characteristic	Range	Frequency	Percentage
	Less than Rs 2000	29	25.7
	Rs 2000-5000	20	17.7
	Rs 5000-10000	61	54.0
	More than Rs 10000	3	2.6
	Total	113	100.0

The data presented in Table 6 shows that maximum number 61(54%) of mothers belongs to the income group Rs 5000-10000, followed by 29(25.7%) of the mothers belonging to the family with income group less than Rs 2000. 20(17.7%) in the income group Rs 2000-5000 and 3 (2.6%) in the income group more than Rs 10000.

3.2. Section II: Frequency and Percentage Distribution of the level of Practices of Oral Rehydration Therapy.

Table 7: Distribution of mothers with respect to the level of practices of oral rehydration therapy. n=113

Level of Practice	Frequency(f)	Percentage (%)
Poor Practice (Less Than 4)	24	21
Average Practice (5-6)	17	15
Good Practice (More Than 6)	72	64
Total	113	100.0

Maximum score=11

The data depicted in Table 7 shows that majority 72(64%) of the mothers have good level of practices, 17(15%) of mothers have average level of practices and 24(21%) mothers have poor level of practices of ORT in the management of diarrhea.

3.3. Section III: Frequency and Percentage Distribution of the Barriers towards the Practices of Oral Rehydration Therapy.

Table 8: Distribution of Mothers having Knowledge Barrier towards the practices of Oral Rehydration Therapy. n=113

Knowledge Barrier	Frequency(f)	Percentage (%)
Low	109	96.5
Moderate	4	3.5
High	—	—
Total	113	100.0

The Table 8 shows that 109(96.5%) mothers have low knowledge barrier followed by 4(3.5%) have moderate knowledge barrier. The mothers does not have high knowledge barrier.

Table 9: Distribution of Mothers having Practice Barrier towards the Practices of Oral Rehydration Therapy n=113

Practice_Barrier	Frequency(f)	Percentage (%)
Low	43	38
Moderate	8	7.1
High	62	54.9
Total	113	100.0

The Table 9 shows that 62(54.9%) mothers have high practice barrier followed by 43(38.1%) have low and 8 (7.1%) have moderate practice barrier.

The Table 10 shows that 78 (69%) mothers have low socio –cultural barrier followed by 35(31%) have moderate socio-cultural barrier and no mothers have high socio-cultural barrier.

Table 10: Distribution of Mothers having Socio-cultural Barrier towards the practices of Oral Rehydration Therapy. n=113

Socio Cultural Barrier	Frequency(f)	Percentage (%)
Low	78	69.0
Moderate	35	31.0
High	—	—
Total	113	100.0

Table 11: Distribution of Mothers having Financial Barrier towards the practices of Oral Rehydration Therapy n=113

Financial_Barrier	Frequency(f)	Percentage (%)
Low	76	67.2
Moderate	1	.9
High	36	31.9
Total	113	100.0

The Table 11 shows that 76(67.2%) mothers have low financial barrier followed by 1(0.9%) have moderate and 36(31.9%) have high financial barrier.

3.4. Section IV: Association between the barriers and practices of Oral Rehydration Therapy.

The data presented in theTable 12 shows by computing the chi-square test ,p-value is found to be significant only in case of knowledge barrier ($X^2=9.5$, $df=3$, $p\text{-value}=0.003$),practice barrier($X^2= 13.01$; $df=6$, $p\text{-value}=0.001$) and socio-cultural barrier($X^2= 57.53$; $df=3$, $p\text{-value}=0.003$) .Since the p-value is significant here ,we may conclude that barriers related to knowledge ,practice and socio-cultural believes has significant association with the level of practice of ORT among the mothers of under five children.

In all other cases chi-square value are found to be insignificant, which lead to the inference that there exists no significant association between access barrier and financial barrier with the level of practices.

Therefore the research hypothesis H_1 can be accepted in case of knowledge, practice and socio-cultural barrier and rejected in case of access and financial barrier.

3.5. Section V: Association between the practices of Oral Rehydration Therapy and demographic variables.

The data given in the table were analysed to find out the association between practice of oral rehydration therapy in the management of diarrhoea and the demographic variables like age, education, occupation, religion, type of community and family income by computing chi square values. The χ^2 values obtained between practice score of the subjects and their age ($X^2=61.539$, $df=6$, $p\text{-value}=0.000$), education($X^2=77.538$, $df=6$, $p\text{-value}=0.000$), religion ($X^2=29.542$, $df=2$, $p\text{-value}=0.000$), type of community($X^2=14.29$, $df=6$, $p\text{-value}=0.000$) and family

Table 12: Chi-square value to test the association between the barriers and practice of Oral Rehydration Therapy n=113

Barrier	df	Chi-square value	p-value	Remark
Knowledge barrier	3	9.5	0.003	S
Practice barrier	6	13.01	0.001	S
Socio-cultural barrier	3	57.53	0.003	S
Access barrier	2	80.16	0.151	NS
Financial barrier	3	13.02	0.133	NS

S=Significant, NS=Non Significant, Level of significance is considered to be at 5%

Not significant when p-value >0.05

Table 13: Chi-square values to test Association between practice of ORT and selected socio demographic variable. n=113

Age	Poor	Average	Good	Total	Chi-square	df	p-value	Remark
<18	0	2	0	2	61.539	6	0.000	S
18-24	23	7	13	43				
24-30	0	8	58	66				
>30	1	0	1	2				
Total	24	17	72	113				
Education					77.538	6	0.000	S
Illiterate	22	4	5	31				
Primary Level	0	3	9	12				
Secondary Level	1	7	57	65				
College Level	1	3	1	5				
University Level	0	0	0	0	3.744	2	0.154	NS
Total	24	17	72	113				
Occupation								
Housewife	23	16	72	111				
Government Employee	0	0	0	0				
Private Employee	1	1	0	2	29.542	2	0.000	S
Business Worker	0	0	0	0				
Total	24	17	72	113				
Religion								
Hindu	24	12	72	108	14.29	6	0.000	S
Muslim	0	5	0	5				
Others	0	0	0	0				
Total	24	17	72	113				
Type of Community								
Assamese	1	9	1	11	84.051	6	0.000	S
Bengali	1	0	71	72				
Nepali	0	1	0	1				
Others	22	7	0	29				
Total	24	17	72	113				
Family Income					84.051	6	0.000	S
<2000 per month	20	6	3	29				
2000-5000 per month	4	3	13	20				
5000-10000 per month	0	5	56	61				
> 10000 per month	0	3	0	3				
Total	24	17	72	113				

S=Significant level< 0.05, NS= Not significant

income($X^2=84.051$, $df=6$, $p\text{-value}=0.000$) were found to be significant i.e $p<0.05$. Thus we conclude that research hypothesis H_2 can be accepted i.e practice score has significant association with selected demographic variable age, education, religion, community and the family income of the mothers except occupation.

3.6. Section VI: Association between the barriers towards the practices of Oral Rehydration Therapy and demographic variables.

The data presented in the Table 14 shows by computing the chi-square test, $p\text{-value}$ was found to be significant only in case of age($X^2=13.65$, $df=3$, $p\text{-value}=0.003$), education($X^2= 20.67$; $df=3$, $p\text{-value}=0.000$) occupation ($X^2= 12.87$; $df=1$, $p\text{-value}=0.001$) and family income($X^2= 84.05$; $df=6$, $p\text{-value}=0.001$). Since the $p\text{-value}$ was significant here ,we may conclude that the knowledge barriers has significant association with mothers age, education ,occupation and family income.

In case of practice barrier $p\text{-value}$ was significant only in age($X^2=13.66$, $df=3$, $p\text{-value}=0.003$), education($X^2= 20.67$; $df=3$, $p\text{-value}=0.000$) occupation ($X^2= 12.87$; $df=1$, $p\text{-value}=0.001$) and family income($X^2= 84.05$; $df=6$, $p\text{-value}=0.001$). Since the $p\text{-value}$ is significant here, we may conclude that the practice barriers has significant association with mothers age, education ,occupation and family income.

In case of socio-cultural barrier $p\text{-value}$ is significant only in age($X^2=28.7$, $df=6$, $p\text{-value}=0.001$), education($X^2= 77.53$; $df=6$, $p\text{-value}=0.001$), Religion ($X^2= 29.54$; $df=2$, $p\text{-value}=0.001$),Type of community ($X^2= 89.34$; $df=3$, $p\text{-value}=0.001$) and family income($X^2= 76.92$; $df=3$, $p\text{-value}=0.001$). Since the $p\text{-value}$ is significant here ,we may conclude that the socio-cultural barriers has significant association with mothers age, education ,religion, type of community and family income.

In case of access barrier the $p\text{-value}$ is significant in age($X^2=28.74$, $df=6$, $p\text{-value}=0.001$) and education($X^2= 22.46$; $df=6$, $p\text{-value}=0.001$). Since the $p\text{-value}$ is significant here, we may conclude that the access barriers has significant association with mothers age and education.

In case of financial barrier the $p\text{-value}$ is significant in family income ($X^2=69.98$, $df=6$, $p\text{-value}=0.001$). Since the $p\text{-value}$ is significant here, we may conclude that the financial barriers has significant association with mothers family income.

In all other cases the Chi-square values are found to be not significant which leads to the inference that there exists no significant association of knowledge barrier with religion and type of community, Practice barrier with religion and type of community, Socio-cultural barrier with occupation ,Access barrier with occupation, religion ,type of community and family income, Financial barrier with age, education, occupation, religion and type of community. In other words the above mentioned barrier are free of these

demographic variables.

4. Discussion

The findings of the study have been discussed with reference to the objectives and in relation to the findings of other studies.

4.1. Practices of oral rehydration therapy in the management of diarrhoea

In order to ascertain the practices of oral rehydration therapy in the management of diarrhea, the following studies have been discussed

The findings of present study shows that majority 72(63.3%) of the mothers have good level of practice, 17(15%) of mothers have average level of practice and 24(21.2%) mothers have poor level of practice of ORT in the management of diarrhoea.

Shaw DD, Jacobsen CA, Konare KF, Isa AR⁷ conducted a community based study on the understanding and knowledge of childhood diarrhea and use of oral rehydration therapy (ORT), in four selected villages in Tumpat District, Kelantan. The investigator found 10% of mothers doing good practice 51 % of average practice and 39% of poor level of practice of ORT. This study contradicts the present study.

4.2. Barriers towards the practices of oral rehydration therapy in the management of diarrhoea.

The findings of the present study shows that 62(54.9%) mothers have high practice barrier, 35(31 %) mothers have moderate socio-cultural barrier and 36(31.9%) have high financial barrier.

Nguyen Thi Thanh Lan⁸(2002) investigated that children did not like to drink the ORS solution and they were nauseas or vomited if they drank it. The factor most related to using ORS properly was the mothers' knowledge. The main recommendation is to improve the provincial health promotion and health education programs by taking into account perception, especially knowledge of mothers. This study supports the present study.

Kadam DM, Hadaye R, Pandit D⁹(2013) investigated practices of oral rehydration therapy in rural areas of vasingh, India and found that one hundred forty five (89%) of mothers were aware about ORS. Only 39.31% of mothers knew that ORS replenishes the water lost during diarrhea. 31.72% mothers felt that ORS stops loose motions. In spite of having correct knowledge of preparation many of them followed wrong practice of preparation.

Table 14: 1Chi-square values to test Association between Barrier towards the practices of ORT and selected socio demographic variable.

Barrier	Demographic characteristics	Df	Chi-square value	p-value	Remark
Knowledge barrier	Age	3	13.665	.003	S
	Education	3	20.678	.000	S
	Occupation	1	12.871	.001	S
	Religion	1	.192	.661	NS
	Type of Community	6	1.429	.071	NS
	Family Income	6	84.05	.001	S
Practice barrier	Age	6	61.53	.001	S
	Education	6	77.53	.001	S
	Occupation	2	3.744	.154	NS
	Religion	2	29.54	.001	S
	Type of Community	6	1.429	.001	S
	Family Income	6	84.05	.001	S
Socio-cultural barrier	Age	6	50.66	.001	S
	Education	3	57.53	.001	S
	Occupation	1	4.53	0.033	S
	Religion	1	2.062	.151	NS
	Type of Community	3	89.34	.001	S
	Family Income	3	76.92	.001	S
Access barrier	Age	6	28.747	.001	S
	Education	6	22.464	.001	S
	Occupation	2	.056	.973	NS
	Religion	2	.143	.931	NS
	Type of Community	6	14.685	.023	NS
	Family Income	6	10.293	.113	NS
Financial barrier	Age	6	46.503	.071	NS
	Education	6	78.893	.062	NS
	Occupation	2	4.355	.113	NS
	Religion	2	1.925	.382	NS
	Type of Community	6	96.689	.081	NS
	Family Income	6	69.981	.001	S

S=Significant, NS=Non Significant, Level of significance at 0.05
Not significant when p-value >0.05

4.3. Association between the barriers and practices of oral rehydration therapy

In this study the investigator concluded that barriers related to knowledge, practice and socio-cultural believes has significant association with the level of practices of ORT by the mothers. This study is consistent with the study done by Widarsa KT¹⁰ et al (1994) in west Lombok district, Indonesia where the results reveals significant association between level of practice and barriers related to knowledge and practice of oral rehydration therapy.

5. Conclusion

Certain conclusions were reached on the basis of the result of data analysis.

1. Majority of mothers have good level of practice of oral rehydration therapy.
2. Majority of mothers have High practice barrier and socio –cultural barrier.

3. The level of practice of oral rehydration therapy is significantly associated with knowledge, practice and socio-cultural barrier.
4. Knowledge barriers have significant association with mothers' age, education, occupation and family income.
5. Practice barriers have significant association with mothers' age, education, occupation and family income.
6. Socio-cultural barriers have significant association with mothers' age, education, religion, type of community and family income.
7. Access barriers have significant association with mothers' age and education.
8. Financial barrier with age, education, occupation, religion and type of community.

According to the introduction of Oral Rehydration Therapy (ORT) in 1975 has significantly reduced the mortality from diarrhea. But due to some barriers faced by the mothers (Lack of knowledge, feeling of nausea /vomiting after

taking ORS, dislike of the taste of ORS, traditional believes) the level of practice of oral rehydration therapy is low.

6. Source of Funding

None.

7. Conflict of Interest

None.

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