

# Comparison of Knowledge and Practice towards Childhood Diarrhea in Mothers of Rural and Urban Settings

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## ABSTRACT

**Background:** A precise understanding of knowledge and practice of the community regarding diarrhea is the only foundations to provide effective education of health.

**Aim:** To compare knowledge and practices of mothers towards childhood diarrhea in rural and urban settings.

**Methods:** This cross-sectional study was conducted in rural and urban settings from September to December 2017. A total of 170 mothers, having children under five years of age, were interviewed by non-probability convenient sampling. Out of 170, 60 mothers from rural setting of Chiniot district while 90 mothers from urban setting surrounding Mayo Hospital, Lahore and Jinnah Hospital, Lahore were interviewed.

**Results:** Regarding knowledge, rural mothers knew that diarrhea is caused by poor drinking water, eating dirty food, dirty hands and teething and the difference was statistically significant. Similarly, rural mothers were more aware of signs of dehydration, role of ORS and its quantity to be administered in diarrhea. Most of the rural mothers preferred breast feeding in diarrhea as their first practice and the difference was statistically significant. Most of the mothers sought treatment from Govt. health care facility as their first practice.

**Conclusion:** Mothers from rural area had comparatively good knowledge and practice regarding childhood diarrhea.

**Keywords:** Knowledge, Practice, Mothers, Children, Diarrhea, Urban, Rural

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## INTRODUCTION

Diarrhea is a disease which ranked second in causing the death of children under five years. It alone is responsible for the approximately 525 thousand children deaths annually.<sup>1</sup> Diarrhea may last several days, and cause severe dehydration and deficiency of salts necessary for survival of human beings. Most of the people who die because diarrhea actually die due to the loss of water and essential salts. Children suffering from malnutrition or having impaired immunity are exposed to risk of life-threatening diarrhea. Most commonly the infection is spread through contaminated food or drinking impure and contaminated water, or from one person to another due to poor hygienic conditions. The guiding principles of Integrated Management of childhood and neonatal illness (IMNCI) recommend the use of oral rehydration therapy, continuation of feeding, and zinc for the appropriate management diarrhea cases<sup>2</sup>.

Community Health education programs are of utmost importance for the effective management of diarrhea, as it has potential to build and maintain a prolific interaction between the health services and the community in order to increase the knowledge of mothers regarding diarrhea, to enhance their capability to identify the danger signs of diarrhea in children and to encourage them to take suitable and early case seeking behaviours.<sup>3</sup> Complete understanding of existing knowledge, attitude and practices of a community are the only foundations to provide effective health education. Thus, it is mandatory to gather all the relevant information regarding KAP of mothers about childhood diarrhea for successful implementation of control programs. Lack of knowledge and awareness about

diarrhea may lead to inappropriate utilization of health service resources available for community. Healthy practices adopted by the mothers may raise the standards of hygiene and healthful living conditions in the society and in this way the morbidity and mortality of under five year children due to diarrhea can be decreased.<sup>4</sup> Therefore, the objective to conduct this study was to compare the knowledge and practices of mothers of rural and urban areas regarding the management of diarrheal diseases in children of under five years of age.

## MATERIAL & METHODS

This cross-sectional study was conducted in rural and urban setting from September to December 2017. Total of 170 mothers, of children under the age of five, were interviewed by non-probability convenient sampling. Out of 170, 60 mothers from rural setting of Chiniot district while 90 mothers from urban setting surrounding Mayo Hospital, Lahore (teaching hospital affiliated with King Edward Medical University, Lahore) and Jinnah Hospital, Lahore (teaching hospital affiliated with Allama Iqbal Medical College, Lahore) were interviewed. After approval of study from the institutional review board, questionnaire for knowledge and practice was used as a study instrument. This questionnaire was pretested in 10 mothers, which were not included in study. After briefing about study, mothers were requested to be interviewed without exposing their identities. The responses where more than three questions were unanswered were not included in this study. Data were entered in SPSS22 and frequency tables were generated. Chi square test was used to measure the variation between the responses.

## RESULTS

Our study population consisted of 80 rural and 90 urban mothers having one or more children of under five years of age. Majority (33.5%) was between 21-25 years of age. Majority of the mothers were illiterate (40.6%). Father's

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occupation was laborer in most of the cases (53.5%) and family income was low (39.5%) (Table 1). Regarding knowledge, rural mothers knew that diarrhea is caused by poor drinking water, eating dirty food, dirty hands and teething and the difference was statistically significant. Similarly, rural mothers were more aware of signs of dehydration. Although urban mothers had a better knowledge about the role of ORS as best oral fluid in diarrhea, but the difference was not statistically significant.

Similarly, difference in response was significant in the better knowledge of rural mothers for role of ORS and its quantity to be administered in diarrhea (Table 2). Most of the rural mothers practiced breast feeding in diarrhea as their first practice and the difference was statistically significant. Most of the mothers sought treatment from Govt. health care facility as their first practice. Hand washing as preventive practice was more observed in rural mothers ( $p=0.000$ ) (Table 3).

Table 1: Demographic characteristics of the study population (n=170)

Variable	Rural area (n%)	Urban area (n%)	Total (n%)
<b>Maternal Age (years)</b>			
16-20	0 (0.0%)	5 (5.6%)	5 (2.9%)
21-25	37 (46.3%)	20 (22.2%)	57 (33.5%)
26-30	34 (42.5%)	21(23.3%)	55 (32.4%)
31-35	9(11.3%)	21(23.3%)	30(17.6%)
36 and above	0 (0.0%)	23(25.6%)	23(13.5%)
<b>Maternal Education</b>			
Illiterate	22(27.5)	47(52.2)	69(40.6)
Primary	42(52.5)	14(15.6)	56(32.9)
Secondary	10(12.5)	19(21.1)	29(17.1)
Above secondary	6(7.5)	10(11.1)	16(9.4)
<b>Husband employment</b>			
Laborer	46(57.5%)	45(50.0%)	91(53.5%)
Factory worker	21(26.3%)	31(34.4%)	52(30.6%)
Farmer	13(16.3%)	14(15.6%)	27(15.9%)
<b>Family income</b>			
<15000	52(65.0%)	15(7.8%)	67(39.5%)
15000-25000	26(32.5%)	26(22.2%)	52(30.5%)
> 25000	2(2.5%)	49(54.4%)	51(30.0%)

Table 2: Knowledge of the mothers towards diarrhea (n=170)

Variable	Rural area (n%)	Urban area (n%)	Total (n%)	p-value
<b>What is most likely cause of diarrhea</b>				
Drinking dirty water	44(45.0%)	20(22.2%)	64(37.6%)	0.004
Eating dirty food	17(21.3%)	43(47.8%)	60(35.3%)	0.001
Dirty hands	1(1.3%)	11(12.2%)	12(7.1%)	0.006
Dirty utensils	0(0.0%)	8(8.9%)	8(4.7%)	0.008
House flies	1(1.3%)	5(5.6%)	6(3.5%)	0.219
Teething	17(21.3%)	3(3.3%)	20(11.8%)	0.003
<b>What are emergency signs of dehydration</b>				
Shrunken eyeball	15(18.8%)	25(27.8%)	40(23.5%)	0.154
Tearless eyes	13(16.3%)	4(4.4%)	17(10.0%)	0.049
Thirsty and dry mouth	1(1.3%)	2(2.2%)	3(1.8%)	1.000
Loss of skin stretch	33(41.3%)	12(13.3%)	45(26.5%)	0.002
Drowsy	12(15.0%)	24(26.7%)	36(21.2%)	0.065
Don't know	6(7.5%)	23(25.6%)	29(17.1%)	0.002
<b>What is best oral fluid given in diarrhea</b>				
Breast milk	23(28.7%)	17(18.9%)	40(23.5%)	0.430
ORS	51(63.7%)	61(67.8%)	112(65.9%)	0.395
Fresh milk	5(6.3%)	4(4.4%)	9(5.3%)	1.000
Powder milk	0(0.0%)	2(2.2%)	2(1.2%)	0.500
Carbonated water	1(1.3%)	0(0.0%)	1(0.6%)	1.000
Mashed/semisolid food	0(0.0%)	4(4.4%)	4(2.4%)	0.125
Yogurt	0(0.0%)	2(2.2%)	2(1.2%)	0.500
<b>What is role of ORS in diarrhea</b>				
Prevent dehydration	50(62.5%)	69(76.7%)	119(70.0%)	0.099
Decrease diarrhea	29(36.3%)	12(13.3%)	41(24.1%)	0.012
Don't know	1(1.3%)	9(10.0%)	10(5.9%)	0.021
<b>What quantity of ORS is to be offered in diarrhea</b>				
50-100ml <2years and 100ml > 2 years	5(6.3%)	29(32.2%)	34(20.0%)	0.000
Don't know the exact quantity	50(62.5%)	50(55.6%)	100(58.8%)	1.000
Don't know	25(31.3%)	11(12.2%)	36(21.2%)	0.029

Table 3: Practice of the mothers towards diarrhea (n=170)

Variable	Rural area (n%)	Urban area (n%)	Total (n%)	p-value
<b>First practice</b>				
Seek treatment	48(60.0%)	37(41.1%)	85(50.0%)	0.278
Giving ORS	1(1.3%)	19(21.1%)	20(11.8%)	0.000
Feeding breast milk	31(38.8%)	1(1.1%)	32(18.8%)	0.000
Stop feeding breast milk	0(0.0%)	1(1.1%)	1(0.6%)	1.000
Home remedies	0(0.0%)	32(35.6%)	32(18.8%)	0.000
<b>Treatment advice</b>				
Govt. health care facility	50(62.5%)	32(35.6%)	82(48.2%)	0.060
Private clinic	2(92.5%)	24(26.7%)	26(15.3%)	0.000
Pharmacy	1(1.3%)	3(3.3%)	4(2.4%)	0.625
Hakeem	11(13.8%)	0(0.0%)	11(6.5%)	0.001
Quack	16(20.0%)	31(34.4%)	47(27.6%)	0.040
<b>Measure of prevention</b>				
Washing hands after using rest room	0	23(25.6%)	23(13.5%)	0.000
Washing hands before feeding	27(33.8%)	13(14.4%)	40(23.5)	0.038
Washing hand and utensil before preparing food	53(66.3%)	24(26.7%)	77(45.3%)	0.001
Using filtered/boiled water	0(0.0%)	28(31.3%)	28(16.5%)	0.000
Don't know	0(0.0%)	2(2.2%)	2(1.2%)	0.500

## DISCUSSION

In present study, majority (33.5%) was between 21-25 years of age with 40.6% illiterate, family income was low (39.5%). These socio-demographic factors are associated with mothers' knowledge, attitude and practice in connection with diarrhea and its management. Regarding knowledge, 45% of rural mothers had knowledge that diarrhea is caused by drinking impure and contaminated water and the difference was statistically significant. Dehydration is one of the significant complications associated with diarrheal disease. In present study, 83% knew the signs of dehydration, and comparatively rural mothers were more aware of signs of dehydration. This is comparable with Merga et al<sup>5</sup>. Datta et al<sup>6</sup> from India, and Salmalin et al<sup>7</sup> from Iran, demonstrating a considerably higher level of awareness. In present study, although urban mothers knew better that ORS is best oral fluid in diarrhea, but the difference was not statistically significant. Difference in response was significant in the better knowledge of rural mothers for role of ORS and its quantity to be administered in diarrhea. This is also comparable with other studies<sup>8, 9</sup> where mothers have good knowledge regarding choice of fluid. However, Amare D et al<sup>2</sup> found in their study that though mothers had of diarrhea and its home management, but this knowledge was not sufficient. In our study, 7.1% of mothers knew that poor hygiene is the main cause of diarrhea. Khalili et al<sup>8</sup> in their study found that 52% of mothers stated their children's diarrhea was the result of dirty food and polluted water. This is comparable with study from our area where 28.4% mothers considered poor hygiene as cause of diarrhea.<sup>10</sup> In our study, 11.8% of mothers stated teething as cause of diarrhea. The findings by Usfar et al<sup>11</sup> and Khalili et al<sup>8</sup> indicated that teething (44.3% and 48% respectively) was reported as major cause of diarrhea. However, a similar study carried out in Nigeria concluded that 35% of mothers considered contaminated food and impure drinking water as an etiologic agent of diarrhea, and only 3.9% believed in teething.<sup>12</sup> In present study, ORS was stated as the best fluid in diet preference. Amare et al<sup>2</sup> showed that 2.2% mothers' diet preference for their child was 2.2% ORS. A Similar study carried out in Karachi, Pakistan claimed that 10% mothers considered ORS as first preferred choice.<sup>13</sup>

The variation in knowledge of mothers toward diarrhea may be due to socio-cultural and educational differences. Lack of previous experience of mothers and a lack of proper education about diarrhea may also be a reason of variation.

According to the IMNCI, mothers or caretakers should consult health facilities for treatment in order to limit any harm to the child's health that may have been caused by diarrhea. In present study, we found that most of the mothers sought treatment from Govt. health care facility as their first practice. This is in line with the results from Merga et al<sup>5</sup> and Othero et al<sup>14</sup> who found that majority of mothers or caretakers sought treatment from licensed medical practitioners for their child even in rural settings. Other preventive practices like hand washing was more observed in rural mothers. Amare et al<sup>2</sup> indicated that 66.6% of the mothers considered hand washing, while Saha et al<sup>15</sup> found in their study that more than 20% of mothers had knowledge about preventive measures for diarrhea.

This study has certain limitations. This study was conducted in two centres only and due to this selection bias, the results from this study cannot be generalized. More studies are needed at larger scales to determine the true difference between knowledge and practices the rural and urban communities so that appropriate gaps may be identified for better case management of diarrhea.

## CONCLUSION

The results of this study indicate that Mothers from rural area had comparatively better knowledge and practice regarding childhood diarrhea.

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**Conflict of interest:** None

## REFERENCES

1. World Health Organization. Diarrhea [Online] 2018 [Cited January 27, 2018] Available from:URL: <http://www.who.int/topics/diarrhoea/en/>
2. Amare D, Dereje B, Kassie B, Tessema M, Mullu G. Maternal knowledge and practice towards diarrhoea management in under five children in Fenote Selam Town, West Gojjam Zone, Amhara Regional State, Northwest Ethiopia, 2014. *J Infect Dis Ther* 2: 182.

3. Kumari P, Vansa N, Lata S. A comparative study to assess the knowledge and attitude of mothers regarding exclusive breast feeding in selected rural and urban areas of district Jalandhar, Punjab. *IOSR J Nurs Health Sci* 2015; 4. 61-6.
4. Padhy S, Sethi RK, Behera N. Mother's knowledge, attitude and practice regarding prevention and management of diarrhoea in children in Southern Odisha. *Int J Contemp Pediatr*. 2017;4(3):966-71.
5. Merga N, Alemayehu T. Knowledge, perception, and management skills of mothers with under-five children about diarrhoeal disease in indigenous and resettlement communities in Assosa District, Western Ethiopia. *J Health Popol Nutr* 2015;33(1):20-30.
6. Datta V, John R, Singh VP, Chaturvedi P. Maternal knowledge, attitude and practices towards diarrhea and oral rehydration therapy in rural Maharashtra. *Indian J Pediatr* 2001;68(11):1035-7
7. Salmalin H, Omidva S, Douki ME. Maternal knowledge and attitude on prevention and care toward diarrheal disease in under five years old children in Babol 2001. *J Babol Uni Med Sci*. 2004;24(7):81-7
8. Khalili M, Mirshahi M, Zarghami A, Rajabnia Chenari M, Farahmand F. Maternal knowledge and practice regarding childhood diarrhea and diet in Zahedan, Iran. *Health Scope*. 2013; 2(1). DOI: 10.5812/jhs.9885
9. Kolahi AA, Shekarriz R. Maternal knowledge and practice in toward oral rehydration therapy in acute diarrheal in less than five years old children in southern of Tehran. *J Trop Infect Dis*. 2008;44(14):45-50.
10. Akram M, Fakhar ul Zaman M, Rafique A. Awareness of mothers regarding concept and management of diarrhea in children of Kasur. *Pak J Med Health Sci* 2016;10(3): 846-50.
11. Usfar AA, Iswarawanti DN, Davelyna D, Dillon D. Food and personal hygiene perceptions and practices among caregivers whose children have diarrhea: a qualitative study of urban mothers in Tangerang, Indonesia. *J Nutr Educ Behav* 2010;42: 33-40.
12. Adimora GN, Ikefuna AN, Ilechukwu G. Home management of childhood diarrhoea: need to intensify campaign. *Niger J Clin Pract*. 2011;14(2):237-41.
13. Zafar M. Knowledge and attitude towards and preventive practices relating to diarrhea among mothers under five years of children: findings of a cross-sectional study in Karachi, Pakistan. *J Infect Dis Ther* 2013;2:1.
14. Othero DM, Orago AS, Groenewegen T, Kaseje DO, Otengah PA. Home management of diarrhea among under fives in a rural community in Kenya: household perceptions and practices. *East Afr J Public Health* 2008;5:142-6.
15. Saha D, Akinsola A, Sharples K, Adeyemi MO, Antonio M. Health care utilization and attitudes survey: understanding diarrheal disease in rural Gambia. *Am J Trop Med Hyg* 2013;89:13-20.