

# Hand Washing Practices of Mothers Attending Immunisation Clinic at a Tertiary Care Hospital of Lucknow

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## ABSTRACT

**Introduction:** Hand washing with soap has been viewed as one of the most cost-effective modes of diminishing the overall burden of infectious diseases predominantly diarrhoea and respiratory infections. Objective: The present study aimed at determining the knowledge and practice of hand washing among the mothers with children aged 0-23 months attending immunisation clinic at a tertiary care hospital of Lucknow, capital of Uttar Pradesh

**Material and Methods:** A hospital based cross-sectional study was conducted at immunisation clinic, King George's Medical University from January 2015 to September 2015. A pre-designed, pre-tested and semi-structured questionnaire was used for interviewing 240 mothers with children 0-23 months old attending immunisation clinic.

**Results:** Most of the mothers (70.0%) knew the importance of hand washing in preventing diseases. Practice of hand washing was although average after defecation (70.8%) but low for events like after cleaning child who had defecated (38.7%), before preparing meal (37.0%) and before feeding child (24.5%). The association between practice of hand washing with soap after cleaning the child who had defecated was found to be statistically significant with age of mother, socio-economic status, level of education of mother and place of residence. Also hand washing before preparing food was found to be comparatively lower among mothers who belonged to low socioeconomic status (30.2%) as well as those residing in rural and slum communities (17.9% and 37.1% respectively).

**Conclusion:** There is a need to increase understanding about importance of proper and adequate hand washing among the mothers through health education activities highlighting the importance of correct method of hand washing with soap and water.

**Keywords:** Hand washing, slum, Practices.

## INTRODUCTION

Diarrhoea and Acute Respiratory infections alone contribute 15% and 18% of all under-five childhood deaths globally.<sup>1</sup> Of all 1.7 million deaths that occur annually due to diarrhoeal diseases world-wide are due to unsafe water, sanitation and hygiene among under-five children and virtually all these deaths occur in developing countries.<sup>2</sup> Young children are unable to properly wash their own hands and thereby provide an opportunity that favours the transfer of pathogens between their hands and their mouth. However, the chances for transmission of diarrheal pathogen from parents to children, who wash their hands more frequently with soap and water is quite less.<sup>3</sup> It is observed that young children and their mothers in developing countries fail to wash their hand adequately after faecal contact.<sup>4</sup> The problem is more in slums areas because of sub-optimal access to safe water and sanitation services. Mothers of only few children

used to maintain a basic cleanliness and hygiene practices at all times to prevent occurrence of diarrhoea.<sup>5</sup> Many previous had concluded that hand washing with soap and water can effectively let down the diarrheal incidence rates by 47%<sup>6,7</sup> with about 23% reduction in incidence of respiratory tract infections.<sup>8</sup> Interventions that promote hand washing with soap are therefore important in public health; however changing behaviour is quite difficult. India has experienced unhygienic hand washing practices over the past decades, yet much significance has not been given to ideal hand washing practices as a tool for prevention of communicable diseases.<sup>9</sup> Therefore the present study was conducted to assess knowledge and practice of hand washing among the mothers with children aged 0-23 months attending immunisation clinic at a tertiary care hospital of Lucknow.

## MATERIAL AND METHODS

The Cross-sectional descriptive study was conducted at immunisation clinic of KG's Medical University, Lucknow.

**Study population:** A maximum of 240 mothers with children 0-23 months old attending immunisation clinic were enrolled in study during the study period of nine months from January 2015 to September 2015. Children not accompanied with their mother were excluded, as it would have given incorrect information about hand washing practices following critical moments like after toilet use, after cleaning a child who had defecated, before handling food etc.

**Data Collection Tools:** A total 240 mothers with children aged 0-23 months attending the immunisation clinic were interviewed about hand washing practice of mothers after the critical moments like after defecation, after cleaning child who had defecated, before cooking, before feeding child using pre-designed, pre-tested and semi-structured questionnaire after availing informed verbal consent were assessed.

## STATISTICAL ANALYSIS

Data was analysed with the help of SPSS version 21. Descriptive statistics was used to generate results.

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## RESULTS

### Biosocial characteristics of the study population

The mean age of mothers was 34.3±9.0 years. Majority

Characteristics	Number	Percentage (%)
Age of mother		
≤ 20	103	42.9
21-30	117	48.8
≥31	20	8.3
Religion		
Hindu	198	82.5
Non-Hindu	42	17.5
Type of Family		
Nuclear	171	71.3
Joint	69	28.8
Level of education of mother		
High school and below	187	77.9
More than high school	53	22.1
Working status of mother		
Working	70	29.2
Non-working	170	70.8
Socio-economic status *		
I and II	58	29.2
III and below	170	70.8
Residence		
Urban	166	69.2
Rural	39	16.3
Urban Slums	35	14.6

\*Modified B.G. Prasad socioeconomic classification 2014

**Table-1:** Socio-demographic characteristics of the mothers. (N=240)

Knowledge	Number	Percentage (%)
Prevention of communicable diseases		
Yes	168	70.0
No	72	30.0
Benefits of hand washing <sup>#</sup>		
Prevention of diarrhoea	132	78.6
Prevention of ARI	109	64.8
Prevention of other intestinal infections	113	67.2
Prevention of skin and eye infection	72	42.9
Critical moments where hand washing is necessary <sup>#</sup>		
After defecation	214	89.1
After cleaning child who has defecated	198	82.5
Before taking meals	180	75.0
Before feeding children	142	59.1
After using the toilet for urination	104	43.3
Before preparation of food	197	82.0
After routine work	102	42.5
Sufficient to wash hands with water alone		
Yes	156	65.0
No	84	35.0

<sup>#</sup> Multiple response

**Table-2:** Knowledge of mothers regarding benefits of hand washing (N=240)

(82.5%) of them were of Hindu religion and about 71.3% belong to nuclear family. Out of 240 mothers interviewed only one-fourth of the mothers were educated more than high school. Majority (70.8%) belonged to socioeconomic class III or below according to Modified B G Prasad socio-economic classification. About one-third (29.2%) of the mothers were working currently, with majority of them were unskilled workers. Majority (69.2%) of the mothers reside in urban area followed by rural and urban slums. (16.3% and 14.6% respectively)

### Knowledge regarding hand washing

About two-third (70.0%) of the mothers opined that hand washing had important role in preventing the spread of communicable diseases. But in contrast to that, 65.0% mothers felt that use of water alone for hand washing is sufficient. Majority of the mothers knew that hand washing could prevent diarrhoea, acute respiratory tract and other intestinal infections (78.6%, 64.8% and 67.2% respectively). However only 42.9 per cent mother knew its role in prevention of skin and eye infection. More than 80% of the mothers believed hand washing as important and crucial activity after defecation, after cleaning child who has defecated and before preparation of food. However less than half of them thought that hand washing as crucial after using toilet for urination and routine work (43.3% and 42.5% respectively).

### Practice of hand washing with soap

Majority (70.8%) of the mothers used to wash their hand properly using soap after defecation. However the practice of hand washing properly with soap was quite less after cleaning the child who had defecated, before preparing meals and before feeding child (38.7%, 37.0% and 24.5% respectively). Majority of these mothers use to wash their hand thoroughly only with water before performing these activities.

### Factors affecting hand washing practices (with soap)

Practice of hand washing after cleaning the child who had defecated was found to be statistically associated with age of mother, socioeconomic status, level of education of mother and place of residence. Near about only one-third of the mothers used to wash their hand with soap in each age-group with lowest proportion (10.0%) in those aged 31 years and above. Only 28.0 per cent of the mothers who belonged to low socio-economic status (III and below) used to wash their hand. Also the practice regarding same was lowest among those residing in rural area. Also association between practice of hand washing with soap and water after defecation with place of residence and religion was found to be significant. The practice of same was found to be lowest (45.7%) among those residing in urban slums. Similarly practice of hand washing with soap before preparing food was found to be comparatively lower among mothers who belonged to low socioeconomic status (30.2%) as well as those residing in rural and slum communities (17.9% and 37.1% respectively).

## DISCUSSION

About 70.0 per cent of the respondents knew about importance of hand washing with respect to prevention of communicable diseases and about two-third (65.0%) believed

Variable	Total (N=240)	After defecation (n=170)		After cleaning child who has defecated (n=93)		Before preparing food (n=89)		Before feeding child (n=59)	
		No.[%]	p	No.[%]	p	No.[%]	p	No.[%]	p
<b>Age of mother</b>									
≤ 20	103	73[70.8]	0.31	38[36.9]	0.01	43[41.7]	0.29	23[22.3]	0.77
21-30	117	80[68.3]		53[45.3]		41[35.0]		31[26.5]	
≥31	20	17[85.0]		2[10.0]		5[25.0]		5[25.0]	
<b>Socio-economic status</b>									
I and II	58	38[65.5]	0.30	42[72.4]	0.00	34[58.6]	0.00	18[31.0]	0.19
III and below	182	132[72.5]		51[28.0]		55[30.2]		41[22.5]	
<b>Level of education of mother</b>									
≤10 std	187	137[73.3]	0.08	65[34.8]	0.02	65[34.8]	0.16	45[24.1]	0.72
>10 std	53	33[62.3]		28[52.8]		24[45.3]		14[26.4]	
<b>Working status of mother</b>									
Working	70	53[75.7]	0.28	25[35.7]	0.50	22[31.4]	0.20	12[17.1]	0.08
Non-working	170	117[68.8]		68[40.0]		67[39.4]		47[27.6]	
<b>Residence</b>									
Urban	166	124[74.7]	0.00	73[44.0]	0.01	69[41.6]	0.02	47[28.3]	0.06
Rural	39	30[76.9]		7[17.9]		7[17.9]		4[10.3]	
Urban Slums	35	16[45.7]		13[37.1]		13[37.1]		8[22.9]	
<b>Religion</b>									
Hindu	198	154[77.8]	0.00	82[41.4]	0.06	75[37.9]	0.58	55[27.8]	0.01
Non-Hindu	42	16[38.1]		11[26.2]		14[33.3]		4[9.5]	
<b>Type of family</b>									
Nuclear	171	120[70.2]	0.75	62[36.3]	0.21	75[43.9]	0.00	41[24.0]	0.71
Joint	69	50[72.5]		31[44.9]		14[20.3]		18[26.1]	

**Table-3:** Factors affecting hand washing practices (with soap and water) among the mothers.

that washing hand with water alone is sufficient. This was quite similar to study conducted in Tamil Nadu by Datta et al.<sup>10</sup> However, this was in paradox to a study from Karnataka by Aithal et al.<sup>11</sup> where 16.7 % of the mothers felt that water alone was sufficient for proper hand washing and 98.7% thought that hand washing was important for disease prevention.

The present study showed that majority of the mothers were aware that washing hands was important for prevention of diarrhoea and acute respiratory tract (78.6% and 64.8% respectively); while more than eighty per cent believed hand washing to be crucial after defecation and after cleaning child who had defecated. Similar findings were also reported by Aithal et al.<sup>11</sup> However the results were much higher as compared to that conducted by Datta et al.,<sup>10</sup> where only 38.88% and 24.92% respectively thought that this practice could prevent from diarrhoea as well as acute respiratory tract among children, however about 56.90% and 15.96% mothers respectively opined washing hands was crucial after defecation and after cleaning the child who had defecated.

Of the 240 mothers surveyed, 70.8% were found to practice hand washing by soap after defecation. Similar type of findings were also described in a study by Pati et al.,<sup>12</sup> in Odisha and Datta et al.,<sup>10</sup> where 72.0% and 73.1% of the women practised hand washing by soap after defecation. However it was quite lower to that reported by Thapa et al.,<sup>5</sup> but higher as compared to study conducted by Ray et al.,<sup>13</sup> The practice of hand washing after defecation was found comparatively less among those residing in slums, which might be attributed to the fact that people in slums used to live in underpriv-

ileged condition with lack of basic amenities and sanitation facilities.

Practice of hand washing with water along with soap after cleaning the child who had defecated (38.5%) was found to be statistically associated with age of mother, socioeconomic status, level of education of mother and place of residence. Similar results were also conveyed in other studies.<sup>10,13,14</sup> Although the knowledge of hand washing after cleaning child who had defecated as one of the crucial moment was stated by majority (82.5%) of the mother but in spite of that practice regarding the same was quite sub optimal. Therefore this practice needs to be encouraged as it could help to significantly reduce infectious diseases in children.

It was quite discouraging that only 37.0% washed hand with soap and water before preparing food; a finding similar to other studies.<sup>10,11</sup> The practice of same was found least among those belonging to low socio-economic status and those residing in rural and slums communities. A large proportion of mothers (75.5%) did not wash their hands with soap before feeding their children. Lack of knowledge and awareness regarding significance of hand washing while food handling might be the reason for casual attitude of the mothers.

#### Limitations

As the present study was conducted at immunisation clinic; therefore the generalizability of the findings is quite limited since only those mothers were who were conscious about their health and were coming to the centre for immunization.

#### CONCLUSION

Proper hand washing practices can play an important role in

reducing the burden of childhood morbidity and mortality and other communicable diseases like diarrhoea, and other infections. The findings revealed gap between knowledge and practice of hand washing. The favourable change in behaviour towards hand washing could be achieved by intensive and continuous health education activities highlighting the importance of correct method of hand washing with soap and water specially before taking food, after defecation and before feeding babies. Apart from that, provision of soap at subsidised costs especially in rural and urban slums communities may possibly help in adoption of hygienic hand washing attitude by mothers.

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