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Original Research Article

Hand washing practices amongst mothers of under-fives in an urban slum

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ABSTRACT

Background: Hand washing with soap is a cost-effective tool of disease prevention, but most of the time it is overlooked. Use of contaminated hands enhances transmission of germs into body causing ill-health. Mothers clean, prepare, serve and feed the food. If this is coupled with poor knowledge and practice of hand washing it increases risk to spread of diseases to self, other family members especially to under-fives. Present study was conducted to address this issue being a critical factor in disease prevention. The objective of the present study was to determine the knowledge and practices of hand washing amongst mothers of under-fives.
Methods: Present cross sectional study was conducted at UHTC, field practice area of Community Medicine, GMC, Latur amongst mothers of under-fives visiting UHTC to avail health services. The data was collected in a predesigned, pretested questionnaire by interviewing them.
Results: Out of 204 mothers, 38.24% were from the age group of 24-26 and majority i.e., 69.61% were housewives. 99.02% mothers were aware that unwashed hands can transmit the diseases. Most of the mothers told that clean hands reduces food and water contamination. Maximum i.e., 97.57% mothers washed hands before eating and 71.57% washed before cooking. All the mothers washed hands after visiting toilet. Most mothers used soap and water (85.3%) for hand washing. Significant numbers of mothers, under-fives and other members suffered from diarrhea in last six months ($p<0.05$).
Conclusions: Hand washing practices need to be followed at all critical moments for prevention of the faeco-oral infections.

Keywords: Hand washing, Mothers of under-fives, Practices

INTRODUCTION

Hands are central to many of our daily activities and use of contaminated hands enhances transmission of microorganisms into body thereby causing ill-health. Large number of diseases can be transmitted due to lack of hand washing ranging from diarrhea to many other life threatening diseases.[1] Hand washing with soap is one of the cost-effective tool of disease prevention, but most of the time it is overlooked.[2,3] Need of hand washing is more in developing countries but practices are found to be poor due to lack of either awareness or infrastructure or combination of both.[4-6]

Importance of hand washing and its role in reducing incidence of communicable diseases like diarrhoea, acute respiratory infections have been highlighted in many studies across world.[6-8] About 1.8 million under five die every year from diarrhoeal diseases and pneumonia across the world.[9] Diarrhoea is second most common cause of children death worldwide.[10] India, Nigeria,

Democratic Republic of the Congo, Pakistan, Ethiopia which are amongst the five most populous and poor countries contributes nearly 90 percent of child deaths due to pneumonia and diarrhea.[11] Hand washing with soap decreases diarrheal attacks by 47 percent and incidence of acute respiratory infections by 23 percent.[12] One out of every three young children who get sick with diarrhea and almost one out of five young children with respiratory infections like pneumonia could be protected by hand washing with soap.[12-14] One of the study showed 41 percent lower mortality among neonates exposed to birth attendant and mothers who practices hand washing.[15] A recent study showed that mother's hand washing practices also helps in reduction of malnutrition among children.[16]

Mothers play many roles at home like cleaning, preparing, serving and feeding food to children. If this is coupled with poor knowledge and practice of hand washing it increases risk to spread of diseases to self as well as other members of family, especially to the under-five children. Young children might benefit from a lower rate of diarrheal pathogen transmission from parents who wash their hands frequently with soap and water.[17] Proper hand washing by mothers of under-fives may act as a crucial factor in reducing prevalence of infectious diseases, hospital admission, mortality and morbidity in these children.[18,19] Considering all this, the present study was conducted to determine the knowledge and practices of hand washing in these mothers.

METHODS

The present cross sectional study was conducted at Urban Health Training Centre which is a field practice area of Department of Community Medicine, Government Medical College, Latur. The study was conducted from 1st October 2018 to 31st December 2018 with an objective to determine knowledge and practices of hand washing amongst mothers of under-five in an urban slum. The mothers of under-fives who were coming to UHTC for antenatal check-up or immunization services were enrolled in the study. Total 204 mothers participated in the study. Data was collected using a predesigned and pretested questionnaire by interviewing them in local language. The questionnaire included sociodemographic data, questions about mothers' knowledge and practices regarding hand washing. They were also asked about any episode of diarrhoea, acute respiratory or other gastrointestinal infection in any of the family members. At the end of interview they were told regarding importance of hand washing. Mothers who refused to participate were excluded from the study.

Statistical analysis

Data was entered in Microsoft Excel and analysed with percentages, Fischers' exact test and Chi-square was used as test of significance.

RESULTS

Out of 204 mothers who participated in the study majority i.e., 78 (38.24% were from the age of 24-26 years followed by 68 (33.33%) aged 21 to 23 years. Most of the mothers were Hindus i.e., 141 (69.12%). Majority of them were educated upto secondary level (38.73%) and were housewife (69.61%) by occupation. Eighty two (40.20%) were from class II socioeconomic status and 105 (51.47%) were from nuclear family (Table 1).

Table 1: Sociodemographic profile of mothers of under-fives.

Sociodemographic factors	Frequency (n=204)	%
Age of mother		
18-20	32	15.69
21-23	68	33.33
24-26	78	38.24
27-29	17	8.33
30-32	8	3.92
33-35	1	0.49
Religion		
Hindu	141	69.12
Muslim	61	29.90
Others	2	0.98
Education		
Illiterate	10	4.90
Primary	33	16.18
Secondary	79	38.73
Higher Secondary	47	23.04
Graduate	35	17.15
Occupation		
Housewife	142	69.61
Agricultural labourer	14	6.86
Non-agricultural labourer	4	1.96
Service	18	8.82
Business	26	12.75
Socioeconomic status		
Class I	4	1.96
Class II	39	19.12
Class III	82	40.20
Class IV	75	36.76
Class V	4	1.96
Type of family		
Nuclear	105	51.47
Joint	44	21.57
Three generation	55	26.96
Age of youngest child (in years)		
<1	12	5.88
≥1<5	192	94.12

Majority of mothers were aware of fact that unwashed hand can cause diseases i.e., 202 (99.02%) while 135 (66.17%) told that unwashed hand can transmit diseases to other. Majority of the mothers i.e., 170 (83.33%) were

aware of the fact that clean hands reduces food contamination and 80 (39.22%) were not aware that water may be contaminated due to unclean hands.

Table 2: Knowledge of the mothers regarding hand washing.

Sr. No.	Questions about	Yes	No
1.	Unwashed hands can cause diseases.	202 (99.02)	2 (0.98)
2.	Unwashed hands can transmit diseases to others.	135 (66.17)	69 (33.83)
3.	Clean hand reduces water contamination.	124 (60.78)	80 (39.22)
4.	Clean hands reduces food contamination.	170 (83.33)	34 (16.67)

Table 3: Knowledge and practice of the mothers regarding critical moments when hands should be washed.

Sr. No	Questions about	Responses about knowledge	%	Responses about practice	%
1.	Before cooking	147	72.06	146	71.57
2.	Before eating	203	99.51	197	97.57
3.	Before serving	92	45.10	80	39.22
4.	After handling raw vegetables or fruits or meat	92	45.10	74	36.27
5.	Before feeding a child	133	65.20	110	53.92
6.	After cleaning a child or changing diaper	195	95.59	191	93.63
7.	After waste disposal	197	96.56	182	89.22
8.	After nursing sick person	41	20.10	30	14.71
9.	After touching or handling domestic and pet animals	77	37.74	66	32.35
10.	After visiting toilet	197	96.57	204	100

Table 4: Medium used to wash the hands.

Sr. No.	Material used for hand washing	No. of responses	%
1.	Water only	17	8.33
2.	Soap and water	174	85.30
3.	Water with antiseptic	10	4.90
4.	Water with ash or mud	03	1.47
Total		204	100

Majority of mothers i.e., 203 (99.51%) had correct knowledge of washing hands before eating followed by 197 (96.57%) had knowledge that one should was hands after visiting the toilet and waste disposal. It was satisfactory that all the mothers (100%) were practicing hand washing after visiting toilet while 97.57% and 93.63% were practicing hand washing before eating and after cleaning the child or changing the diaper respectively. Only 41 (20.1%) mothers had knowledge that the hands should be washed after nursing a sick person and of these 30 (14.71%) practiced it actually.

Table 5: Hand washing practices amongst the mothers of under-fives.

Sr. No.	Question asked	Responses	
		Yes	No
1.	Do you wipe your hands till dry?	112 (54.90)	92 (45.10)
2.	Have you washed hands today after any critical moments of hand washing?	192 (94.11)	12 (5.88)
3.	Do you ask your child to wash hands with soap and water regularly?	198 (97.06)	6 (2.94)

Hundred and eighty four (90.2%) mothers used water with soap or antiseptic while 17 (8.33%) used only water for hand washing.

Most of the mothers (97.06%) told that they advise their children to wash their hands regularly but 12 (5.88%) mothers had not washed their hands on the day of interview after critical moment.

Table 6 and 7 shows the association between the medium used for hand washing and episodes of diarrhoea and ARI in last six months amongst the mother under five child and other family members. Out of 20 mothers and under-

fives who used only water with ash or mud for hand washing all had at least an episode of diarrhea in last six months showing significant association (p<0.001 by Fischers' exact test). Most of the other family members (85%) had the same illness as they didn't use soap and water (X^2=12.88 p=0.0003).

Table 6: Association of hand washing practices and history of episodes of diarrhoea in the family.

Episode of diarrhea in last 6 months		Medium used for hand washing		Total	P value	Significance
		Water with soap or antiseptic	Only water or water with mud or ash			
Self	No	120 (65.22)	00 (0.00)	120	0.001*	Significant
	Yes	64 (34.78)	20 (100)	84		
Under five child	No	143 (77.72)	00 (0.00)	143	0.001*	Significant
	Yes	41 (22.28)	20 (22.28)	61		
Other family members	No	110 (59.78)	03 (15.00)	113	0.003	Significant
	Yes	74 (40.21)	17 (85.00)	91		

*****Fischers exact test**;** Figures parentheses indicate percentages.

Table 7: Association of hand washing practices and history of episodes of ARI in the family.

Episode of diarrhea in last 6 months		Medium used for hand washing		Total	Chi-square at df=2	Significance
		Water with soap or antiseptic	Only water or water with mud or ash			
Self	No	149 (80.98)	03 (15.00)	152	37.95 0.0001	Significant
	Yes	35 (19.02)	17 (85.00)	52		
Under five child	No	153 (83.15)	02 (10.00)	155	48.96 0.0001	Significant
	Yes	31 (16.85)	18 (90.00)	49		
Other family members	No	113 (61.41)	02 (10.00)	115	17.35 0.0003	Significant
	Yes	71 (38.59)	18 (90.00)	89		

Figures parentheses indicate percentages.

Chi-square revealed a significant association between medium used for hand washing and episodes of ARI in last six months (Table 7; p<0.001).

DISCUSSION

The present cross sectional study was conducted to assess the knowledge and practices of mothers of under-fives in an urban slum area. Hand washing practices in these mothers affect health of children in many ways. Many studies have shown that washing hands with soap can reduce the risk of diarrhoeal diseases and ARI, which might save millions of lives every year.[5,18]

In the present study most of the mothers were in age group of 20-30 years, educated upto primary level and above, were housewife by occupation and were from nuclear family. Similar study conducted by Yerpude et al in urban slum of Andhra Pradesh also reported similar findings, in which most of the mothers were between age 20-30 years, educated primary and above (61.9%), housewife by occupation (71.9%) and were from nuclear family (69.01%).[20] In present study 202 (99.02%) mothers told that unwashed hands can cause diseases. Another study conducted in Karnataka by Aithal et al found that 96.7% of respondents had knowledge regarding prevention of diseases with hand washing was.[21]

All the mothers (100%) were practicing hand washing after defecation which was encouraging and similar to findings in the studies conducted by Pandve et al, Rafath et al, De et al and Ray et al.[22-25] Most of the mothers i.e., 97.57% in this study were practicing hand washing before eating. These findings were comparable to the finding by De et al in which 95% of mothers were practicing hand washing before eating.[24] Present study showed that 71.57% of mothers were practicing hand washing before cooking, 39.22% before serving and 36.27% after handling raw vegetables fruits and meat. These findings were contrast with the findings in a study in two communities of eastern India by Ray where none of the mother was practicing hand washing before preparing food and handling raw vegetables.[25] However the percentage is much lower as compared to study conducted by Yerpude et al in which 76.8% and 67.4% mothers were practicing hand washing before preparing food and serving respectively.[20] This might be due to poor knowledge of mothers about hand washing. Hand washing is very crucial before feeding any under-five child as they are more susceptible to diseases like diarrhoea and ARI. The present study found that 53.92% of mothers were washing hands before feeding the child; similar to the findings by Thapa et al and Borah et al where 48% and 57% of the mothers respectively did not wash their hands before feeding a child.[27,28] Only 14% were practicing hand washing after nursing a sick person. But a study by Pang et al found that 50% of the

participants were not washing their hands before and after attending to sick person.[29] Lack of knowledge amongst the mothers regarding mode of spread of diseases may be responsible for this.

Most of the mothers (85.30%) were using water with soap for hand washing which was quite satisfactory. Pandve et al and De et al observed that 80% and 74.67% of participants were using water with soap as medium of hand washing respectively which was comparable with the present study findings.[22,24]

Many studies demonstrated that communities which practice hand washing with soap and water have less incidence of diarrhoea and respiratory disease.[5,13,30] In the present study significant association was found between medium of hand washing and episodes of diarrhoea and ARI in last 6 months amongst mothers under five children or other family members. Significantly more numbers of family members suffered from diarrhoea, ARI or both diseases who used ash or mud with water as compared to those who used soap or antiseptic with water ($p<0.001$). Pandve et al also found significant relationship between medium of hand washing and episodes of diahroea or URTI in last three months.[22] Borah et al and Freeman et al revealed that there was greater incidence of diarrhea amongst children of the mothers who didn't practice hand washing with soap and water.[28,31]

Limitations

As the present study was conducted amongst the mothers visiting urban health centre, the findings cannot be generalized. The sample size is also small and may not be representative of the community.

CONCLUSION

The present study found that a good number of the mothers were washing hand at some crucial moments like after defecation, before eating, after cleaning or changing the diaper and waste disposal. But nearly half of the mothers were not washing hands before feeding child which needs to be addressed as common gastrointestinal infections are spread faeco-orally. The favourable changes in behavior towards hand washing by mothers could be achieved by health education highlighting its importance.

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