

Research Article

A Study on Knowledge and Practices of Wash and Sanitary Hygiene Among Preschool Children and Their Mothers in an Urban Area

Shrikant S Birajdar¹, Jayalekshmi CS², BS Jadhav³, AS Nagaonkar⁴

¹Senior Resident,⁴Head of Department, Department of Community Medicine, Vilasrao Deshmukh Government Medical College, Latur, Maharashtra.

²Junior Resident, ³Ex-Dean, Ex-Professor and Head of Department, Department of Community Medicine, Rajiv Gandhi Medical College, Thane, Maharashtra.

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Corresponding Author:

Shrikant S Birajdar, Department of Community Medicine, Vilasrao Deshmukh Government Medical College, Latur, Maharashtra.

E-mail Id:

birajdarshrikant1111@gmail.com

Orcid Id:

<https://orcid.org/0009-0005-4663-9971>

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A B S T R A C T

Background: Public health continues to be greatly impacted by WASH (water, sanitation, and hygiene). The potential risk of spreading infectious and numerous water-related illnesses has been associated with inadequate hygiene practices, poor sanitation, and lack of access to safe water.

Aims and Objectives: To study the knowledge and practices regarding drinking water and sanitary hygiene among the mothers of preschool children and to study the sanitary hygiene practices of preschool children in an urban slum area.

Methodology: The present cross-sectional study was conducted in one of the localities under the catchment area of the urban health training centre of a medical college in Maharashtra. All the children in the age group of 3–6 years in the locality were included with complete enumeration. The sociodemographic details, household details and knowledge and practices of mothers and children on hygiene were recorded using a pre-tested questionnaire. Data was analysed using an MS Excel spreadsheet and suitable statistical methods.

Results: There were 385 study participants in total. 96% of them had household taps as a source of drinking water, 42% practised boiling and 52% practised filtering for water purification before consumption. Among the respondents, 6% did not follow any purification methods. 81.3% of the participants had in-house latrine facilities and 18.7% relied on public toilets. A very good percentage (> 80%) of mothers checked the hygiene practices of children before and after eating and after using the toilet.

Conclusion: The knowledge of mothers on water and sanitary hygiene was good and their practice.

Keywords: Water and Sanitary Hygiene, Pre-School Children, Urban Slum

Introduction

Water and Sanitation Hygiene (WASH) has paramount importance in public health. Sanitation, cleanliness, and access to safe drinking water are essential for human health and well-being. Safe WASH is not only necessary for good health, but it also supports livelihoods, dignity, and attendance at school. It also builds resilient communities that live in hygienic surroundings. Drinking contaminated water can lead to health problems including diarrhoea, and untreated excrement contaminates surface and groundwaters used for home, agricultural, and drinking purposes. Numerous Neglected Tropical diseases (NTDs), including schistosomiasis, trachoma, and soil-transmitted helminths, can be avoided in large part by practising safe and adequate WASH. During the Millennium Development Goal (MDG) period (1990–2015), diarrhoeal mortality caused by inadequate WASH was cut in half, with a major contributing factor being the notable advancements in the provision of water and sanitation.¹ The UN General Assembly formally acknowledged the human right to clean water and sanitation in 2010. For home and personal use, everyone has the right to an adequate supply of continuously flowing, safe, acceptable, physically accessible, and reasonably priced water. Enduring Progress Universal and equal access to reasonably priced, safe drinking water is outlined in Goal Target 6.1. The indicator of “safely managed drinking-water services,” which is drinking water from an improved source that is on-site, accessible when needed, and uncontaminated by prioritised chemicals and faeces, is used to track the target.² The WHO Bulletin’s editorial from September 2023 emphasises the ongoing health hazards associated with poor WASH (water, sanitation, and hygiene). WHO estimates that improved access to these essential facilities might prevent up to 1.4 million deaths yearly.³ Initiatives for WASH interventions can reduce the incidence of diarrhoea in children ages 0 to 5 by 27% to 53%. This is strong evidence in favour of expanding WASH in low- and middle-income countries (LMICs).⁴ An estimated 158,209 children aged 0 to 6 died in India from diarrhoea, accounting for 9.1% of all diarrhoea-related fatalities in this age group.⁵

Since there are few data specifically pertaining to India, it is necessary to investigate the sustainability of hand-washing behaviour in the communities as well as the advantages of scaling up interventions, even though interventions that promote hand-washing and other hygiene measures clearly show a reduction in diarrheal risk in the short term.⁴ Children in India are being encouraged to wash their hands with soap before eating and after using toilets by means of the school hygiene programme and a public awareness campaign on “the hand-washing day.” Similar to this, World Toilet Day serves to raise public awareness of government

initiatives and the negative impacts of open defecation.⁵

Clearly, awareness among mothers can create big differences in the incidence of WASH-related communicable diseases as well as in the general health of the population.

Thus, this study aimed to study the knowledge and practices regarding drinking water among the mothers of preschool children, to study the sanitary hygiene practices of preschool children, and to assess the knowledge and practices of sanitary hygiene among mothers of preschool children in an urban slum area.

Methodology

The present cross-sectional study was conducted in the urban field practice area of a medical college in Maharashtra from March 2021 to September 2021. Ethical approval was obtained from the Institutional Ethics Committee prior to the start of the study. All the children in the age group of 3–6 years in one of the localities under the catchment area of the urban health training centre were included with complete enumeration. Line listing of children of age group 3–6 years was done from the records of Anganwadi. Accordingly, house to house survey was done. Those who did not give consent to take part in the study were excluded. A total of 385 study participants took part in the study. The children were clinically examined. The household premises were examined for the mode of water supply and sanitary facilities. The sociodemographic details, household details, and knowledge and practices of mothers and children on hygiene were recorded using a pretested questionnaire. Personal hygiene of the children was assessed by examining parameters like clean/ unclean hair, clean/ unclean oral cavity, clean or unclean eyes, clean trimmed/ unclean untrimmed nails, clean or unclean body, clean or unclean clothes and categorised as satisfactory and unsatisfactory accordingly. Knowledge of mothers regarding hygiene was assessed by asking whether it is important or not to practice using clean drinking water and handwashing before preparing food, after using the toilet and after handling the child’s toilet. Data was entered in MS Excel and the chi-square statistical test was applied. The data is represented in tables. The mothers were educated about the importance of wash and sanitation hygiene. Both children and mothers were educated about proper handwashing techniques too.

Results

A total of 385 study subjects participated in the study of which 191 (49.61%) were boys and 194 (50.39%) were girls. Most of them, 181 (47.01%) belonged to the age group of 3 to 4 years, followed by 4 to 5 years (154, 40.0%) and 5 to 6 years (50, 12.99%).

The education of the mothers of the children was also recorded. 41(10.65%) of the mothers were illiterate, 99

(25.71%) had primary level education, 12 (3.12%) had middle school education, 53 (13.77%) attained high school level education, 101 (26.23%) had intermediate education, 63 (16.36%) were graduate and 16(4.16%) were postgraduate. A majority, 352 (91.43%) mothers were homemakers and 33 (8.57%) were employed.

Most of the study subjects, 355 (92.21%) lived in chawls, 15 (3.90%) in apartments and 15 (3.90%) in kutcha houses. The distribution is shown in Table 1.

369 households were using household taps as the source of drinking water, 11 were using community taps, and 5 were using other sources like bore wells.199 households had a practice of filtration of water before consumption and 162 practised boiling. 24 households followed no methods of purification prior to consumption. 313 households had in-

house latrine facilities or family members and 72 depended on community latrines. 377 households utilised municipal bins for disposal of waste, 6 practised open dumping of waste and 2 households used other methods like burning and burial. The distribution is depicted in Figure 1.

The knowledge of mothers regarding the importance of hygiene was good. The hygienic practices of mothers regarding their children were also considerably fair. 322 (83.33%) mothers checked that their children wash their hands before eating and 327 (84.94%) checked that their children wash their hands after eating. 320 (83.11%) mothers ensured that their children wash hands after using the toilet. 292 (75.84%) mothers used separate towels for children at home. This information is depicted in Table 2.

Table 1. Sociodemographic Details of Study Subjects

Variables	Boys n (%)	Girls n (%)	Total N (%)
Age Group (years)			
3–4	92 (23.90)	89 (23.12)	181 (47.01)
4–5	75 (19.48)	79 (20.52)	154 (40.00)
5–6	24 (6.23)	26 (6.75)	50 (12.99)
Mothers' Education			
Illiterate	23 (5.97)	18 (4.68)	41 (10.65)
Primary School	48 (12.47)	51(13.25)	99 (25.71)
Middle School	9 (2.34)	3 (0.78)	12 (3.12)
High School	22 (5.71)	31 (8.05)	53 (13.77)
Intermediate	54 (14.03)	47 (12.21)	101 (26.23)
Graduate	29 (7.53)	34 (8.83)	63 (16.36)
Postgraduate	6 (1.56)	10 (2.6)	16 (4.16)
Mother's Occupation			
Homemaker	173 (44.94)	179 (46.49)	352 (91.43)
Job	18 (4.60)	15 (3.90)	33 (8.57)
Type of House			
Apartment	8 (2.08)	7 (1.82)	15 (3.90)
Chawl	177 (45.97)	178 (46.23)	355 (92.21)
Kutcha	6 (1.56)	9 (2.34)	15 (3.90)

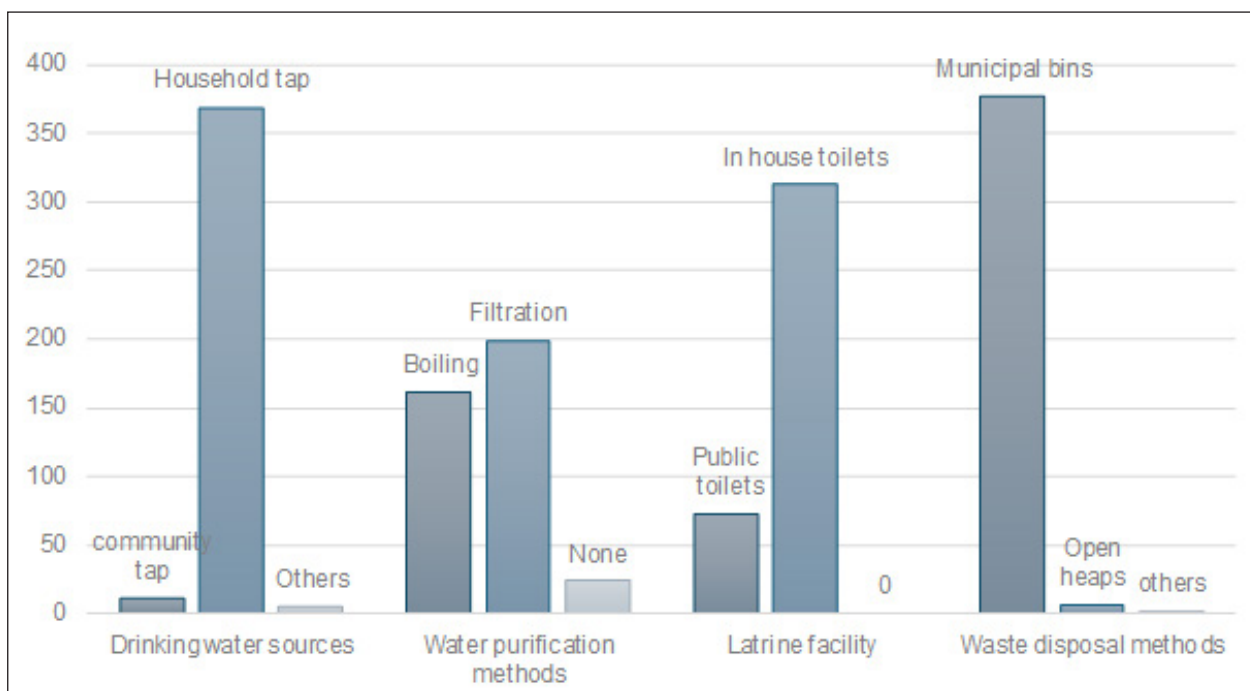


Figure 1. Drinking Water Sources, Water Purification Methods, Latrine Facility and Waste Disposal in the Households

Table 2. Knowledge and Practices of Mothers Regarding Hygiene

Knowledge and Practices of Mothers	Positive Responses n (%)
Knowledge of mothers regarding hygiene	
Clean utensils	385 (100.00)
Clean drinking water	385 (100.00)
Washing hands before preparing food	374 (97.14)
Washing hands with soap after using the toilet	373 (97.00)
Washing hands after handling the child's toilet	373 (97.00)
Practices of mothers regarding the hygiene of children	
Check that their children wash their hands before eating	322 (83.33)
Check that their children wash their hands after eating	327 (84.94)
Check that their children wash their hands after using the toilet	320 (83.11)
Using separate towels for children	292 (75.84)

The hygiene practices of the children were also satisfactory. All the children brushed their teeth in the morning. 364 (94.55%) went to the toilet on their own. 320 (83.12%) washed their hands after using the toilet. 359 (93.25%) washed their hands after playing outside. 322 (83.64%) washed their hands with soap before food. 327 (84.94%)

washed their hands after food. 280 (72.73%) changed their dress once in a day. 63 (16.36%) changed their dress more than once in a day. 272 (70.65%) took a bath at least once a day, and 113 (29.35%) took a bath twice or more in a day. The distribution is shown in Table 3.

Table 3. Hygiene Practices of Children

Hygiene Practices		Boys n (%)	Girls n (%)	Total N (%)
1.	Brush their teeth daily in the morning	191 (50.00)	194 (50.00)	385 (100.00)
2.	Go to the toilet on his/ her own			
	Yes	180 (46.75)	184 (47.79)	364 (94.55)
	No	11 (2.86)	10 (2.60)	21 (5.45)
3.	Wash their hands after using the toilet			
	Yes	161 (41.82)	159 (41.30)	320 (83.12)
	No	30 (7.79)	35 (9.09)	65 (16.88)
4.	Wash hands after playing outside			
	Yes	179 (46.49)	180 (46.75)	359 (93.25)
	No	12 (3.12)	14 (3.64)	26 (6.75)
5.	Wash hands with a soap before food			
	Yes	162 (42.08)	160 (41.56)	322 (83.64)
	No	29 (7.53)	34 (8.83)	63 (16.36)
6.	Wash hands after food			
	Yes	164 (42.60)	163 (42.34)	327 (84.94)
	No	27 (7.01)	31 (8.05)	58 (15.06)
7.	No. of times the child changes clothes in a day			
	1	136 (35.32)	144 (37.40)	280 (72.73)
	≥ 2	55 (7.79)	50 (8.57)	63 (16.36)
8.	No. of times the child has a bath in a day			
	1	132 (34.29)	140 (36.36)	272 (70.65)
	≥ 2	59 (15.33)	54 (14.03)	113 (29.35)

Table 4. Association of Mothers' Education with Hygiene

Education of Mother	Personal Hygiene of Children (N = 385)		Having Separate Towels for Children (N = 385)	
	Satisfactory	Unsatisfactory	Yes	No
< High school	2	150	105	47
≥ High school	231	2	187	46
p value	< 0.05 (significant)		0.01 (significant)	

A significant association was found between the education of the mother and the personal hygiene of children as well as the usage of separate towels for children (p value < 0.05). Table 4 shows the distribution.

Discussion

In a study conducted among slum-dwelling children of Odisha, 81% of children said that they wash their hands before taking food and 19% of children said they ate their food without washing their hands. In our study too, a good majority of children (83.64%) washed their hands before food and only 16.36% did not wash their hands before having food.⁶

In a study conducted by Divya et al. among mothers of under-five children, it was found that only 20% of mothers had adequate knowledge and only 16% had good hygiene practices, whereas in our study it was found that a good percentage ($> 97\%$) of mothers had adequate knowledge and their hygiene practices were also fair.⁷

In a study conducted by Rao et al., the knowledge of mothers on hand washing ranged from 73.3% to 100%. The practices of mothers and children ranged from 75% to 98.3% and from 50.8% to 95%, respectively. In our study, the knowledge of mothers regarding hygiene ranged from 97% to 100%, hygiene practices of children ranged from 70 to 100% and that of mothers ranged from 75 to 85%.⁸

Borah et al., in their study done in Assam, observed a statistically significant association between a mother's educational status and the practice of handwashing with soap during childcare. In the present study too, the education of mothers had a significant association with the hygiene of children.⁹

In a study conducted by Reddy et al. in Andhra Pradesh, it was found that 69% did not follow any water purification methods before consumption and open defecation was practised commonly (84%) in households, whereas in our study, only 6% did not follow any water purification methods prior to consumption and subjects utilised either household or community latrines for defecation.¹⁰

In a similar study conducted by Datta et al. in rural coastal South India, it was found that 80.08% of mothers thought handwashing was crucial before eating meals; 56.90%, 41.73% and 40.73% felt that it was important to wash hands after defaecation, before preparing food and feeding child, respectively. In our study, 97% of mothers said that it is important to wash hands before preparing food, after using the toilet and after handling the child's toilet.¹¹

In a study conducted by Jeyakumar et al in Maharashtra, it was observed that only 70% of households treated water before consumption and open defecation was practised in 50% of the households. However, in our study, it was

observed that 94% of households followed some method of purification of water before consumption and none of them practised open defecation.¹²

Conclusion

Public health remains significantly affected by the quality of Water, Sanitation, and Hygiene (WASH) practices. Inadequate hygiene practices, poor sanitation, and lack of access to safe water contribute to the potential spread of infectious diseases such as cholera, typhoid, and hepatitis A.

In our study, the knowledge of mothers on hygiene was good and sanitary practices were fair. Education of mothers is significantly associated with the personal hygiene of children and hygiene practices. Some recommendations are health education to mothers to improve their hygiene practices furthermore, teaching and encouraging basic hygiene practices in Anganwadi in children and educating children and mothers on proper hand washing techniques.

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Conflict of Interest: None declared

References

1. World Health Organization [Internet]. Water, sanitation and hygiene (WASH); 2019 Nov 7 [cited 2023 Aug 21]. Available from: https://www.who.int/health-topics/water-sanitation-and-hygiene-wash#tab=tab_1
2. World Health Organization [Internet]. Water, sanitation and hygiene (WASH); 2020 May 19 [cited 2023 Aug 21]. Available from: <https://www.who.int/india/health-topics/water-sanitation-and-hygiene-wash>
3. World Health Organization [Internet]. Unsafe water, sanitation and hygiene: a persistent health burden; 2023 Sep 5 [cited 2023 Sep 10]. Available from: <https://www.who.int/news/item/05-09-2023-unsafe-water--sanitation-and-hygiene--a-persistent-health-burden>
4. Darvesh N, Das JK, Vaivada T, Gaffey MF, Rasanthan K, Bhutta ZA; Social Determinants of Health Study Team. Water, sanitation and hygiene interventions for acute childhood diarrhea: a systematic review to provide estimates for the Lives Saved Tool. *BMC Public Health*. 2017;17(4):776. [PubMed] [Google Scholar]
5. Lakshminarayanan S, Jayalakshmy R. Diarrheal diseases among children in India: current scenario and future perspectives. *J Nat Sci Biol Med*. 2015;6(1):24. [PubMed] [Google Scholar]
6. Pati S, Kadam SS, Chauhan AS. Hand hygiene behavior among urban slum children and their care takers in Odisha, India. *J Prev Med Hyg*. 2014 Jun;55(2):65-8. [PubMed] [Google Scholar]
7. Divya V, Jyothi J, Josepheena J, Dicky K, Litha J, Dolma L, Sahayam S, Dona S, Jayasheeli S, Angel M. Knowledge and reported practices regarding hand washing among

- mothers of under five children. *RGUHS J Nurs Sci*. 2018 June;8(1):49-53. [Google Scholar]
8. Rao KK, Gayatrivarsha M, Hanumant N. Impact of mother's knowledge, attitude and practices of handwashing on their children in a sub-urban area of Visakhapatnam (India). *Int J Acad Med Pharm*. 2023;5(1):117-22. [Google Scholar]
 9. Borah M, Kakati R. Hand washing practices among mothers of children under 5 years of age in rural areas of Kamrup District, Assam. *Indian J Basic Appl Med Res*. 2016 Jun;5(3):687-94. [Google Scholar]
 10. Reddy BV, Kusuma YS, Pandav CS, Goswami AK, Krishnan A. Water and sanitation hygiene practices for under-five children among households of Sugali Tribe of Chittoor District, Andhra Pradesh, India. *J Environ Public Health*. 2017;2017:7517414. [PubMed] [Google Scholar]
 11. Datta SS, Singh Z, Boratne AV, Senthilvel V, Bazroy J, Dimri D. Knowledge and practice of handwashing among mothers of under five children in rural coastal South India. *Int J Med Public Health*. 2011;1(1):33-8. [Google Scholar]
 12. Jeyakumar A, Godbharle SR, Giri BR. Water, sanitation and hygiene (WaSH) practices and diarrhoea prevalence among children under five years in a tribal setting in Palghar, Maharashtra, India. *J Child Health Care*. 2021;25(2):182-93. [PubMed] [Google Scholar]