Asian Pac. J. Health Sci., **2017; 4(1):107-111** **e-ISSN: 2349-0659, p-ISSN: 2350-0964**

Document heading **doi: 10.21276/apjhs.2017.4.1.19** **Research Article**

A cross sectional study on infection control practices among mothers attending immunization clinic at a teaching hospital in Haryana

Puneet Anand , Rakhi Jain , Gunjan

[1]Attending Consultant , Department of Paediatrics, Sitaram Bhartia Institute of Science & Research,Qutab Institutional Area ,New Delhi,India
[2]Assistant Professor, Department of Paediatrics, ESIC Medical College & Hospital, Faridabad, Haryana, India
[3]Senior Resident, Department of Paediatrics, ESIC Medical College & Hospital, Faridabad, Haryana, India

ABSTRACT

Introduction: Mother's hand washing practices, immunization awareness and early initiation of breast feeding are important steps to reduce neonatal and infant morbidity & mortality. Still these are not routinely practiced in our country. Therefore health education of mothers regarding infection control practices is a necessary intervention**. Materials & Methods:** A hospital based cross-sectional study was conducted at immunisation centre in our institution from August 2016 to October 2016. A pre-designed questionnaire on infection control practices was used for interviewing mothers of under five children attending immunisation clinic**.** Data was analyzed using SPSS software and results were interpreted into percentages. **Results:** 348 participants took part in the study. Mean age of the participants was 27.61±4.45 years. Awareness regarding infection control practices was fairly good among mothers except for hands should be washed with both soap and water. Mother's educational status and infection control practices were related to each other. **Conclusion**: Lack of adequate information, maternal education level, socioeconomic factors, etc. influences the infection control practices which can be improved by proper health education of mothers and implementing programmes for hygiene practices.

Keywords: Breast feeding, Diarrhoea, Hand washing, Immunization, Under five children

Introduction

Communicable diseases are a major cause of morbidity and mortality in children mainly in African and South Asian countries. [1] On an average 10.9 million under 5 children deaths occur globally annually, out of which 2.4 million are in India alone. [2] Diarrhea and Acute respiratory infections are a major cause of all these deaths. [3] Majority of these deaths are due to inadequate sanitation and poor hygiene. [4] Hand hygiene is a cost effective intervention in preventing communicable diseases. [1] Previous studies have reported that proper hand washing with soap and water reduces the incidence of diarrhea and respiratory infections. [5-7] Hand washing with soap after defecation is not practiced widely in developing countries. [8] Early initiation of breastfeeding is also a very important infection control practice and reduces infection specific neonatal mortality. [9] But despite all the efforts from government, its incidence still continues to be low. [10] Vaccines are a safe and a cost effective method of infection control. [11] In 2009, UNICEF survey showed vaccination coverage to be 61% which was lower than the target of 85% coverage. [12] Parental knowledge regarding immunization is very important as it increases compliance and removes many barriers against immunization. [13] Keeping in view of the fact that maternal knowledge is vital for child health, this study evaluated the maternal knowledge regarding infection control practices and its contributing factors.

**Correspondence*

Dr. Puneet Anand

Attending Consultant, Department of Paediatrics, Sitaram Bhartia Institute of Science & Research, Qutab Institutional Area ,New Delhi, India

E Mail: anandpuneet83@gmail.com

Materials & methods

This cross sectional descriptive study was conducted in our institution from August 2016 till October 2016. Permission was taken from Institutional Ethics Committee before starting the study. Mothers with under five children attending the immunization clinic

of our institution were enrolled in the study after taking a proper informed consent. Mothers who did not give consent were excluded from the study. Data collection was done using predesigned , pre tested and semi structured questionnaire focusing on knowledge of infection control practices like hand washing, immunization and early initiation of breast feeding. Data collected was entered in Microsoft Excel and analyzed using SPSS Software version 21.

Results

A total of 348 mothers took part in this study. Table 1 shows the demographic characteristics of the study population. Mean age of the participants was 27.61±4.45 years. Maximum participants (46.26%) were between 26-30 years of age. One hundred thirty six (39.08 %) participants were educated upto secondary school whereas only 14.37 % were illiterate. Majority of the participants (76.15%) were housewives.

Table 1: Characteristics of study population

Variable	No	%
Age in years		
19	1	0.28
20-25	121	34.77
26-30	161	46.26
31-37	65	18.39
Education		
Illiterate	50	14.37
Primary	113	32.47
Secondary	136	39.08
Graduate/Post graduate	49	14.08
Occupation		
Housewife	265	76.15
Labourer	49	14.08
Job	31	8.91
Farmer	3	0.86

Table 2 shows awareness of mothers regarding infection control practices. Three hundred forty four (98.85%) mothers knew the importance of hand washing. Only 50.28% of the mothers were aware that hands should not be washed with soap & water. Almost all mothers were aware that hand washing should be done after toilet, before cooking and before feeding a child. Three hundred forty two (98.27%) mothers were aware of the importance of vaccination in preventing infections.

Table 2: Awareness regarding infection control practices

Question	YES N (%)	NO N (%)	Don't know N (%)
Hand washing importance	344(98.85)	4(1.15)	0
Hands to be washed with soap & water	175(50.28)	170(48.85)	3(0.86)
Hands to be washed after toilet	346(99.42)	1(0.28)	1(0.28)
Hands to washed before cooking	348(100)	0(0)	0(0)
Hands to be washed before feeding	347(99.71)	0(0)	1(0.28)
Importance of vaccination	342(98.27)	4(1.14)	2(0.57)

Table 3 shows awareness regarding initiation of breast feeding in mothers. Most of the study population (73.28%) was aware that breast feeding must be initiated immediately after birth whereas 91 (26.15%) mothers replied that it should be started after 24 hours of birth.

Table 3: Awareness regarding initiation of Breast feeding

Breast feeding Initiation	N (%)
-Within One hour	**255(73.28)**
- After 24 hours	**91(26.15)**
- Next day	**1(0.29)**
- Not important	**1(0.29)**

Table 4 shows awareness of infection control practices according to maternal age. One hundred twenty two (100%) mothers between 19 – 25 years age, 159 (98.75 %) mothers between 26-30 years age and 63(98.44 %) mothers

between 31-37 years were aware of the importance of hand washing. Only 57 (47.10%), 89 (55.27 %) and 29(44.61%) mothers between 19 – 25 years age, between 26-30 years age and between 31-37 years age respectively were aware that hands should be washed with soap and water. Almost all mothers were aware that hands should be washed after toilet, before cooking and before feeding a child. One hundred twenty three (76.39%) mothers between 26-30 years age were aware of the proper timing for initiation of breast feeding while only 83 (68.03%) mothers between 19-25 years age and 49(75.38 %) mothers between 31-37 years age correctly answered about it. Majority of study population was aware about importance of vaccination.

Table 4: Awareness of infection control practices according to age

Question	19-25 years N (%)	26-30 years N (%)	31-37 years N (%)
Importance of hand washing	122(100)	159(98.75)	63(98.44)
Hands to be washed with soap & water	57 (47.10)	89 (55.27)	29(44.61)
Hands to be washed after toilet	121(99.18)	161(100)	64(98.46)
Hands to be washed before cooking	122(100)	161(100)	65(100)
Hands to be washed before feeding	121(99.18)	161(100)	65(100)
Initiation of breast feeding	83(68.03)	123(76.39)	49(75.38)
Importance of vaccination	119(97.54)	159(98.75)	64(98.46)

Table 5 shows awareness of infection control practices according to educational status of mothers. Awareness regarding importance of hand washing was present in 98% of illiterate and 100% of graduate/post graduate mothers. Twelve percent (12%) of illiterate mothers and 97.96% of graduate/post graduate mothers knew that hand washing should not be done with water alone. Almost all mothers were aware that hand washing should be done after toilet, before cooking and before feeding a child. Fifty percent (50%) of illiterate mothers, 87.5% mothers educated upto secondary class and 95.92% graduate/postgraduate mothers knew when breast feeding should be initiated in a newborn. All (100%) of graduate/postgraduate mothers were aware of importance of vaccination in preventing infection in children.

.**Table 5: Awareness of infection control practices according to education**

Question	Illiterate N (%)	Primary education N (%)	Secondary education N (%)	Graduates/post graduates N (%)
Importance of hand washing	49(98)	111(98.23)	135(99.26)	49(100)
Hands to be washed with soap and water	6(12)	32(28.31)	89(65.44)	48(97.96)
Hands to be washed after toilet	50(100)	112(99.12)	135(99.26)	49(100)
Hands to be washed before cooking	50(100)	113(100)	136(100)	49(100)
Hands to be washed before feeding	50(100)	112(99.11)	136(100)	49(100)
Initiation of breast feeding	25(50)	64(56.64)	119(87.50)	47(95.92)
Importance of vaccination	49(98)	110(97.35)	134(98.53)	49(100)

Discussion

In our study, maximum (98.85%) study population knew the importance of hand washing in preventing infections. Our findings were similar to various previous studies where majority of the participants were aware of benefits of hand washing in preventing diseases. [1, 14, 15, 19] This is very encouraging as the main benefit of hand washing is to remove chemicals and pathogens from hands which can potentially transmit diseases. We observed that approximately 50% mothers believed that hands should be washed with soap and water but it was quite low as compared to some previous studies. [15-18] Whereas in an earlier study 78% mothers were of the view that hands should be washed with water alone. [19] In a systematic review the global prevalence of hand washing with soap was estimated to be a dismal 19%. [20] Thus, health education should be imparted to mothers regarding hand washing with soap and water as it helps in preventing diarrhea and respiratory tract infections. Present study observed that maximum mothers knew the importance of hand washing before some crucial events like after defecation, before preparing meals and feeding a child which was better than some previous studies. [1, 21, 22] Various Epidemiological studies have shown that the most important risk factors are contact with fecal matter and before handling food and many initiatives have been adopted to promote behaviour change towards improved hand washing practices.[23,24] Knowledge regarding importance of immunization in preventing diseases was adequate which was supported by some earlier studies. [13, 25, 26] This could be because of an increase in health

information related to vaccination by print media, television, the internet and other sources. Most participants knew that breast feeding must be initiated within one hour of birth in a normal newborn which was better than previous similar studies. [27-29] National Family Health Survey – 4 (NFHS-4) data for Haryana state shows prevalence of initiation of breastfeeding within one hour of birth to be 42.4% but it is still better than NFHS -3 (22.3%) data.[30,31] Observation from our study is encouraging as early initiation of breast feeding helps in reducing infection specific neonatal mortality. It was observed that infection control practices had no correlation with age of study population in contrast with previous studies. [15, 19, 21, 22] Knowledge of hands to be washed to be both soap and water had association with maternal education which was similar to some previous studies. [15, 19, 32] Similarly early initiation of breast feeding was also associated with maternal education as seen in a study by Bhatt et al. [27]This is very important as education leads to proper knowledge of infection control practices and understanding of harms of not washing hands leading to good hygiene practices among mothers.Our study reveals that the awareness of mothers regarding infection control practices was good except that hands should be washed with both soap and water. Also awareness was related with educational status of the mother. The main limitations of our study were small sample size of the study population and limited generalizability of the findings as mothers who were already health conscious were visiting the immunization centre.

Conclusion

Hand hygiene improvement is not given much of importance in public health, though it is an issue of significance to a subset of the population, especially under five children and their care givers. Hand washing must be incorporated along with safe water and sanitation programmes as essential interventions to reduce neonatal and infant morbidity and mortality. “Hand washing day” and promotion of hand washing practices through school hygiene programmes can help in promoting hand hygiene among children. In promoting infection control practices, village level health workers such as anganwadi and ASHA workers must be involved to impart health education to mothers. Lack of awareness and social–cultural beliefs are major obstacles in implementing infection control practices like vaccination coverage and early initiation of breast feeding and this can be overcome by improving female literacy, as these young females will become mothers later and maternal awareness has a very crucial role in improving child health.

Acknowledgement

We acknowledge Mr Ajendra Pratap Sharma, Statistician for his valuable help in our research.

References

1. Yerpude PN, Jogdand KS, Sumra NA. A cross-sectional study on hand washing practices among mothers in an urban slum area. Int J Health Sci Res. 2014; 4(10):1-5.
2. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? Lancet 2003; 361:2226-34.
3. World Health Organization. Preventing disease through healthy environments.2006 Available from http://www.who.int/ quantifying_ehimpacts / publications/ preventing disease.pdf.
4. Murray CJ, Lopez AD. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. Lancet 1997; 349:1436–1442.
5. Luby SP, Agboatwalla M, Feikin DR, Painter J, Billhimer W, Altaf A, Hoekstra RM. Effect of handwashing on child health: A randomized controlled trial. The Lancet 2005; 366: 225-233.
6. Rabie T, Curtis V. Evidence that handwashing prevents respiratory tract infection: a systematic review. Trop Med and Int Health. 2006; 11:1-10.
7. WHO. Preventing diarrhea through better water, sanitation and hygiene: exposures and impacts in low- and middle-income countries. World Health Organization.2014. Geneva.p:14.
8. LiKosek M, Bern C, Guerrant RL. The global burden of diarrheal disease, as estimated from studies published between 1992 and 2000. Bulletin of the World Health Organization 2003; (81):197-204.
9. Edmond KM, Kirkwood BR, Amenga-Etego S, Owusu- Agyei S, Hurt LS. Effect of early infant feeding practices on infection-specific neonatal mortality: An investigation of the causal links with observational data from rural Ghana. Am J Clin Nutr 2007; 86:1126-31.
10. Sinhababu A, Mukhopadhyay DK, Panja TK, Saren AB, Mandal NK, Biswas AB. Infant- and young child-feeding practices in Bankura district, West Bengal, India. J Health Popul Nutr 2010; 28:294-9.
11. Angadi MM, Jose AP, Udgiri R, Masali KA, Sorganvi V. A study of knowledge, attitude and practices on immunization of children in Urban

Slums of Bijapur city, Karnataka, India. J Clin Diagn Res 2013; 7:2803-6.

12. United Nations Children's Fund. Coverage Evaluation Survey Report. 2009– National Fact sheet.

13. Qutaiba, B., Al-lela, O., Bahari, M.B., Al-Qazaz, H.K., Salih, M.R., Jamshed, S.Q. and Elkalmi, R.M. Are parents' knowledge and practice regarding immunization related to pediatrics' immunization compliance? A mixed method study.BMC Pediatrics, 2014; 14(20): 1471 – 2431

14. K.Seema Aithal, Miti Judith Ogorchukwu, Vidya Prabhu, Prafulla Shriyan, Uday Narayan Yadav. Hand washing Knowledge and Practice among mothers of under-five children in coastal Karnataka, India – A cross-sectional study. Int J Med Health Sci. 2014:3:266-271

15. Shukla M, Agarwal M. Hand washing practices of mothers attending immunisation clinic at a tertiary care hospital of Lucknow. International Journal of Contemporary Medical Research 2016; 3(5):1372-1375

16. Thapa Gobil , Barua Alak, Dowerah Swagata . Study of hand washing practices among mothers having children under 5 years of age. International Journal of Basic and Applied Medical Sciences. 2015; 5:201-204.

17. Pati S, Kadam SS and Chauhan AS. Hand hygiene behaviour among urban slum children and their caretakers in Odisha, India. Journal of Preventive Medicine and Hygiene. 2014;1-3.

18. Ray SK, Dobe M, Maji S, Chakrabarty D, Sinha Roy AK, Basu SS, 2006. A pilot survey on hand washing among some communities of West Bengal. Indian J Public Health.2006: 50: 225–230

19. Datta SS, Singh Z, Boratne AV, Senthilvel V, Bazroy J, Dimri D. Knowledge and practice of hand washing among mothers of under five children in rural coastal South India. Int. J. Med. Public health .2011;1(1):33-38.

20. Freeman MC, Stocks ME, Cumming O, Jeandron A, Higgins JPT, Wolf J et al. Hygiene and health: systematic review of hand washing practices worldwide and update of health effects. Tropical Medicine and International Health. 2014; 19 (8): 906–916

21. Ray SK, Dobe M, Lahiri A, Basu SS. Hand washing practices in urban and rural communities in and around Kolkata, West Bengal. Indian J Public Health .2009; 53: 192–195.

22. Scott B, Curtis V and Rabie T. Protecting children from Diarrhoea and Acute Respiratory Infections: The role of hand washing promotion in water and sanitation programmes. Regional Health Forum 2003;7(1):42-47.

23. Lanata CF, Huttly SR, Yeager BA. Diarrhea: whose feces matter? Reflections from studies in a Peruvian shanty town. Pediatric Infectious Disease Journal .1998; 17(1):7-9.

24. Clasen T, Roberts I, Rabie T, Schmidt W, Cairncross S. Interventions to improve water quality for preventing diarrhoea. Cochrane Database of Systematic Reviews .2006; 3: CD004794.

25. Shah B, Sharma M, Vani S: Knowledge, attitude and practice of immunization in an urban educated population. Ind J Pediatr. 1991; 58(5):691–695.

26. Qidwai W, Ali S, Ayub S. Knowledge, attitude and practice regarding immunization among family practice patients. J Dow Univ Health Sci. 2007; 1(1):15–19.

27. Shwetal B, Pooja P, Neha K, Amit D, Rahul P. Knowledge, attitude and practice of postnatal mothers for early initiation of breast feeding in the obstetric wards of a tertiary care hospital of Vadodara city. Natl J Community Med. 2012; 3(2):305–9

28. Khan AM, Kayina P, Agrawal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. Indian J Public Health. 2012; 56:301-4.

29. Sinhababu A, Mukhopadhyay DK, Panja TK, Saren AB, Mandal NK, Biswas AB. Infant- and young child-feeding practices in Bankura district, West Bengal, India. J Health Popul Nutr .2010; 28:294-9.

30. National Family Health Survey (NFHS-3), 2005–06: India: Vol. 1.Mumbai: International Institute for Population Sciences and Macro International; 2007.

31. National Family Health Survey (NFHS-4), 2015–16: India: International Institute for Population Sciences; 2016.

32. Borah M, Kakati N.Hand washing practices among mothers of children under 5 Years of age in rural areas of Kamrup District, Assam. Indian Journal of Basic and Applied Medical Research. 2016; 5(3): 687-694.

Source of Support: Nil
Conflict of Interest: None