Original Article

Assessment of Knowledge, Attitude, Handwashing Practices and its associated factors Among Mothers of Children Presenting in Paediatric Department of a Tertiary Care Hospital of a Developing Country.

Shahzaib Maqbool[1], Maryam Haider[1], Ather Iqbal, Arham Ihtesham[1], Waleed Inayat Mohamed[1], Muhammad Nadeem Langove[2], Laraib Arsh[1], Omaima Sundus[1], Syed Turab Haider[3], Hassam Omer[1].

Abstract

Objective: Despite remarkable progress in scientific methods and measures against infectious disease transmission, the prevalence of infectious diseases is still on the rise in resource-poor countries. Hand hygiene is considered an effective way of fighting against deadly infectious diseases. Our study aimed to assess knowledge, attitude, and hand hygiene practices among mothers of children presenting for routine paediatric check-up in the department of paediatrics in a tertiary care hospital of Rawalpindi.

Materials and Methods: It's a descriptive cross-sectional study involving 400 mothers from the paediatric department of the Holy family hospital (HFH), Rawalpindi. A convenient sampling technique was used to select the study participants. A semi-structured, pre-tested questionnaire that included demographic details, knowledge, attitude, and practice levels were assessed through validated questionnaires used in previously published studies. Descriptive statistics were used for demographic details and chi-square analysis was used to find an association between handwashing practice with knowledge and attitude. A $P<0.05$ was taken as significant. Data analysis was done through SPSS.v.23.

Results and Discussion: In total, 400 females participated in the study and the mean age (±SD) was 32.4±10.2 years. The mean age of children was 31.2±12.2 months. The level of good handwashing knowledge and attitude was 93% and 60% respectively. However, the level of good handwashing practice was just 40%. The age of mothers, residential area, occupation, socioeconomic status, and the level of knowledge regarding handwashing, showed significant association with handwashing practices.

Conclusion: In our study handwashing practice among mothers was relatively low. Age of mothers, residential area, occupation, socioeconomic status, and the level of knowledge regarding handwashing, were significantly associated with handwashing practices.

Keywords: Attitude, Handwashing, knowledge, Practice, Paediatric department, Mothers of Children.

International Journal of Human and Health Sciences Vol. 05 No. 04 October'21 Page : 418-423
DOI: http://dx.doi.org/10.31344/ijhhs.v5i4.351

Introduction

Despite remarkable progress in scientific methods and measures against infectious disease transmission, the prevalence of infectious diseases is still on the rise in resource-poor countries as evident from a study that infectious diseases are responsible for 1.6 million deaths among children of under-five age group [1,2]. Hand hygiene is considered an effective way of fighting against deadly infectious diseases such as respiratory tract infections and most importantly diarrheal diseases that are posing a significant disease burden among children [3].

There are several effective ways of maintaining hand hygiene that could vary among different communities depending upon their customs and practices, but handwashing with soap is taken as the most cost-effective method of preventing infectious diseases [4]. The evidence-based benefits of practicing regular hand washing and maintaining overall hygiene could effectively reduce the increasing burden of infectious diseases among children. This is supported by a study that shows the number of deaths could be reduced

1. Final year MBBS, Rawalpindi Medical University, Rawalpindi, Pakistan.
2. House officer, Rawalpindi Medical University, Rawalpindi, Pakistan.
3. Final year MBBS, Nishtar Medical University, Multan, Pakistan.

Correspondence to: Shahzaib Maqbool, Final year MBBS, Rawalpindi Medical University, Rawalpindi, Pakistan.
E-mail: hasanshahzaib299@gmail.com

to 2.4 million by practicing safe and effective handwashing practices [5].

The role of the mother in maintaining the hygiene of herself and her child is pivotal as the mother is considered a continuous source of contact with her child and plays a paramount role in her child's health and well-being [6,7]. Hand washing is termed as a mechanical barrier in the transmission of infectious diseases like respiratory tract infections, skin diseases, trachoma, and finally diarrhoea [8]. The dual duty of mothers of rearing their child, maintaining a healthy environment, and housekeeping in terms of cooking and house cleanliness all are potent factors for infectious diseases transmission to children that need to be addressed in an effective way [9]. Despite knowing the importance of hand hygiene and overall sanitary lifestyle, still children's caregivers show insignificant attitude towards hand hygiene practice and show poor performance in maintaining a good healthy environment for their children's wellbeing [10].

In the light of the above-given scenario, our study aimed to assess knowledge, attitude, and hand hygiene practices among mothers of children presenting for routine paediatric check-up in the department of paediatrics in a tertiary care hospital of Rawalpindi.

Materials and Methods

Study design, period, and setting: Hospital-based descriptive cross-sectional study was carried out from 15th September 2019 to 15th November 2020 to assess the knowledge, attitude, and hand hygiene practices among mothers of children presenting in the paediatric department of Holy family hospital Rawalpindi, Punjab which is tertiary care hospital affiliated with the Rawalpindi medical university, Rawalpindi.

Sample size determination: The sample size calculation was done through a single population proportion formula with population proportion of approximately 50% (p=0.5) as obtained with 95% confidence level having the corresponding z-score of 1.96 with 5% margin of error (d). The total sample size was calculated out to be 384.16 or approximately 385, but we intentionally took 400 sample size, the reason for this oversampling was to account for non-eligibility and non-responder rates.

$$n = \frac{(z)^2 \times p \times (1-p)}{d^2}$$

$$n = \frac{(1.96)^2 \times 0.5 \times (1-0.5)}{(0.05)^2} = 384.16$$

Sampling technique: Convenient sampling technique was used to select the study participants. All those children with age of less than 5 years were selected and their mothers were interviewed directly. The language barriers were nullified by explaining each and every question of the used questionnaire to mothers. All those mothers who were willing to participate were included in our study and those who were non-cooperative due to some social and cultural barriers were excluded from study population. The participants who were elected from the department of paediatrics and data was collected from mothers presenting in the out-patient department (OPD), paediatric emergency, paediatric ward, and high dependency unit (HDU). The purpose of the study was clearly described to every participant and verbal consent was taken before the collection of data. Ethical values were considered with full capacity and confidentiality of each participant was maintained.

Data Collection Tool: A semi-structured, pre-tested questionnaire with excellent validity and reliability having Cronbach alpha value of 0.78, was adapted from various published literature was used to assess the variables of our interest [11,12]. The score of ≥65% was considered as good knowledge, attitude and practice. Those who failed to answer at least 65% of the asked responses were categorized as negative or poor knowledge, attitude and practice. The questionnaire included socio-demographic details of mothers in terms of age, education, residential area, and source of water either protected or unprotected. The socio-economic status was assessed through the Family Affluence Scale with eight-points score form (0-7) that was further divided into three categories low (0-3), middle (4-5) and high (6-7) [13]. The knowledge and attitude of handwashing among mothers was assessed through 8 and 10 objectively designed questions respectively. There were 21 questions for assessment of handwashing practices. Mothers who scored ≥65% (positive) overall on knowledge indicator items were considered to have good knowledge and those who failed to answer at least 65% of the asked responses were considered to have poor (negative) knowledge about handwashing. The same scoring scale was used for good and poor handwashing attitude and practices.

Statistical Analysis:

The collected data was carefully evaluated and the datasheet was constructed with full accuracy. Data analysis was done through the social package for statistical analysis (SPSS.v.23). Sociodemographic details were described in terms of frequencies and percentages. Finally, chi-square analysis was done to find the association between handwashing practices among mothers with desired demographic features and with their knowledge and attitude. A value of <0.05 was considered as significant.

Results

In total 400 females participated in the study and the mean age (±SD) was 32.4±10.2 years. The mean age of children was 31.2±12.2 months. Most of the children were suffering from diarrheal diseases followed by upper respiratory tract infections, meningitis, malnutrition, and other childhood illnesses as shown in (Figure 1). The demographic characteristics were quantified in terms of frequencies and percentages as shown in (Table 1). Most of the females were housewives 235 (58.75%) while 165 (41.25%) females were employed. The majority of females were literate and were living in urban areas. However, the most common handwashing facility was through water and soap combined. The majority of patient burden was from middle-class families forming 61.25% of the total sample population. The study results that the levels of good handwashing knowledge and attitude was 93% and 60%. However, only 40% of mothers were showing good hand hygiene practices.

By using chi-square analysis, the age of mothers, residential area, occupation, socioeconomic status, and handwashing knowledge were showing statistically significant results with mother's handwashing practice. The age of mother (P-value=0.003), occupational status (P-value=0.000) and handwashing knowledge (P-value=0.000), socioeconomic status (P-value=0.045), residential area (P-value=0.001) were significant at P<0.05 as shown in (Table 2).

Table 1: Demographic characteristics

Variables	Frequency (n)	Percent (%)
Age of mothers in years		
16-27	102	36.25
28-33	103	25.75
34-42	101	28.75
43-48	94	9.25
Residential area		
Urban	250	62.5
Rural	150	37.5
Educational status		
Literate	280	70
Illiterate	120	30
Occupation		
Housewife	235	58.75
Employed	165	41.25
Socioeconomic status		
Upper class	35	8.75
Middle class	245	61.25
Lower class	120	30
Type of hand washing facility		
Water only	120	30
Water and soap	220	55
Hand sanitizer	60	15
Source of water		
Protected	298	74.50
unprotected	102	25.50

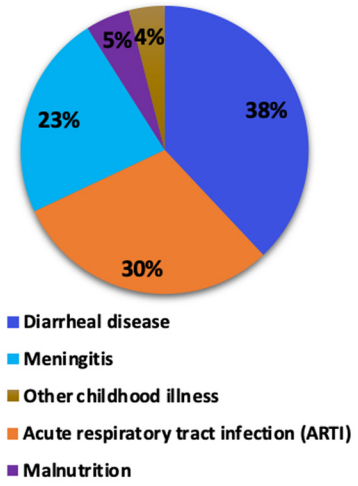

Fig 1: The percentages of children presenting with various diseases.

Discussion and Conclusion

Discussion:

This study sought to assess the level of knowledge, attitude, and hand hygiene practices among mothers of children presenting in the paediatric department of a tertiary care hospital. It also assessed the associated factors with good handwashing practices among the mothers maintaining good hand hygiene is considered an essential way of preventing transmissible diseases. As evident from various literature that poor hand washing is associated with the transmission of several infectious diseases like diarrhoea, respiratory tract infections, and children are more prone to get these infections because they are in continuous contact with their parents, relatives, and friends [14]. This is now considered the sole responsibility of the parents to protect their children from getting exposed to these infectious diseases.

In our study findings, the prevalence of poor handwashing practices was high among mothers. As per our study findings, the level of knowledge regarding handwashing was high among 93% of females but only 40% of the mothers were practicing recommended handwashing practices and these findings are consistent with a similar study conducted in Ethiopia with only 39% of the mother's population showing good hand hygiene practices [15]. However, similar studies from Nigeria [16], Hosanna [17], and India [18] were showing a higher prevalence rate of 73.8%, 71.97%, and 43.6% respectively. The variation

Table 2: Showing the descriptive statistics between handwashing practice and demographic details by using chi-square analysis.

Characteristics		Mothers handwashing practice		P-value
		Good (%)	Poor (%)	
Age of mother	16-27 28-33 34-42 43-48	45 (28.15) 41 (25.62) 34 (21.25) 40 (25.00)	57 (23.75) 62 (25.83) 67 (27.91) 54 (22.50)	0.003 *
Residential status	Rural Urban	40 (25.00) 120 (75.00)	110 (45.83) 130 (54.16)	0.001 *
Occupation	Employed Housewife	88 (55.00) 72 (45.00)	77 (32.76) 158 (67.23)	0.000 *
Educational status	Illiterate Literate	45 (28.12) 115 (71.87)	85 (35.41) 155 (64.58)	0.281
Socioeconomic status	Lower class Middle class Upper class	50 (31.25) 85 (53.12) 25 (15.62)	70 (29.16) 160 (66.66) 10 (4.16)	0.045 *
Mothers handwashing knowledge	Poor Good	3 (1.87) 157 (98.12)	24 (10.00) 216 (90.00)	0.000 *
Mothers handwashing attitude	Poor Good	53 (33.12) 107 (66.87)	110 (45.83) 130 (42.91)	0.401

Note: * P-value<0.05 is taken as significant.

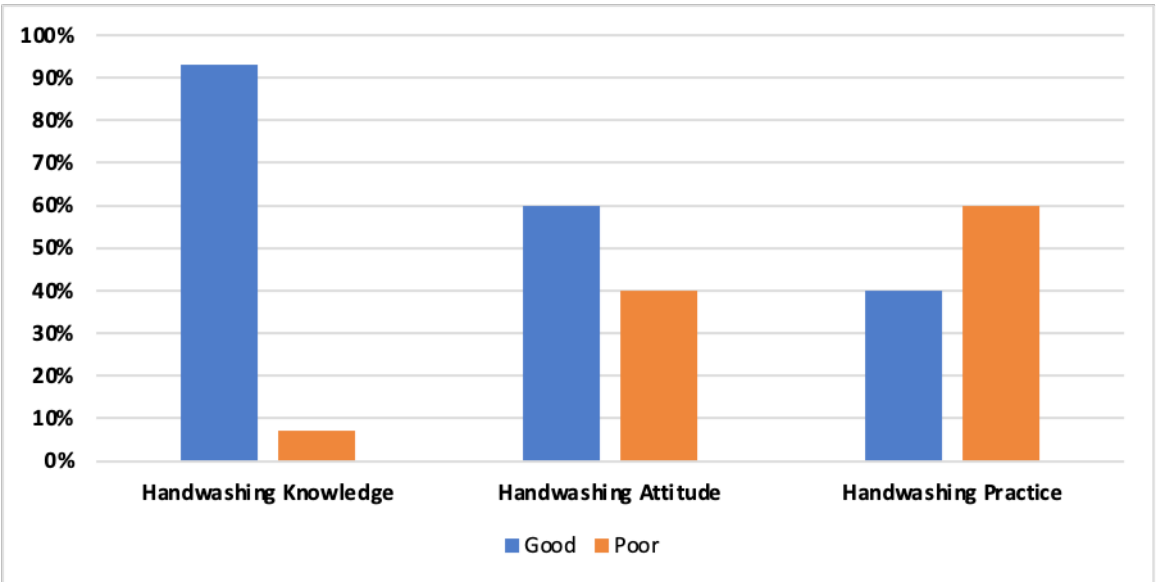

Fig 2: Showing the levels of handwashing knowledge, attitude and practice.

between these studies and our study findings could be explained due to differences in the socio-demographic nature of the study areas, the difference in measuring tools and health services. Many factors can influence knowledge, attitude, and handwashing practices and the most important factors are socio-demographical features like education level, occupational status, residential areas, and socio-economic status. In our study, we found a significant association between the age of the mother and handwashing practice with P<0.003. Our study findings are showing that with the increasing age of the mothers the handwashing practices become poor that could due to careless attitude with the increasing number of pregnancies [15]. In our study, the handwashing knowledge among mothers was also significantly associated with handwashing practices but still, mothers were not performing recommended handwashing practices. The possible reason could be that the knowledge alone is not enough for practicing good handwashing practices, multiple factors can

help in improving and maintaining the desired level of handwashing practices as evident from a published study [19]. Similarly, lack of education and sense of negligence in maintaining the good handwashing practices could be the reason, that despite of having good handwashing knowledge and attitude, still the level of handwashing practices was poor.

Socioeconomic status is also considered an important factor towards good and recommended handwashing practices. Different kinds of literature are showing clearly that higher socioeconomic status is a paved road map towards good handwashing practices. In our study, we found a significant association between handwashing practice with socioeconomic status $P<0.045$ that is in concordance with a study showing the socioeconomic status as a good predictor of handwashing practices [20], showing that the level of good hand hygiene practice is high among mothers of higher socioeconomic status. Similarly, we found a significant association between handwashing practices and a residential area showing that those who are living in urban areas were having higher levels of good handwashing practices as in line with a similar study from Ethiopia [15]. The possible reason could be the availability of hand hygiene products and high quality of life among the urban population.

The interesting finding of our study was a non-significant association between mother's handwashing attitude and handwashing practices with a $P>0.05$ that is contrary to other studies, showing that desirable attitude is associated significantly with good handwashing practices [21]. However, some studies are validating our study findings in terms of showing a non-significance association between handwashing practices and handwashing attitude [22]. This study was conducted among mothers of the children presenting in the Paediatric department however, there are still chances of infection transmission from fathers and other relatives that need further research to explore these associations. In the light of above-mentioned study results it is need of time to make the mothers of aware of handwashing benefits in terms of their children good health and wellness. Arranging seminars and through mass media awareness campaigns the level of levels of good handwashing practices among mothers can be improved effectively.

Conclusion:

Handwashing practice is considered an important barrier against disease transmission. In our study handwashing practice among mothers was relatively low, and only 40% of the mothers were performing good and recommended handwashing practices. However, the level of knowledge was good among 93% of the population. Similarly, the level of attitude was good among 60% of the population. The age of mothers, residential area, occupation, socioeconomic status, and mother's level of knowledge regarding handwashing, were significantly associated with handwashing practices with P-values of (0.003, 0.001, 0.000, 0.045, 0.000).

Recommendations:

We would like to recommend that awareness sessions and seminars should be arranged either at national or international levels for making our society aware of health benefits related to handwashing practices. we do believe that this effort will prove fruitful in eradication of number of diseases.

Source of fund:

No funding was granted by any source for accomplishment of this study.

Conflict of interest:

Authors have declared that they have no conflict of interest to disclose.

Ethical clearance:

Our study is approved by ethical review board and ethical considerations were given full priority during data collection as well.

Authors' contribution:

Shahzaib Maqbool and Maryam Haider: conception and design. Ather Iqbal and Arham Ihtesham: Data acquisition and analysis. Waleed Inayat Mohamed and Muhammad Nadeem Langove: Critical analysis and manuscript writing. Laraib Arsh and Omaima Sundus: Manuscript design and critical review of article. Syed Turab Haider and Hassam Omer: Final approval and data maintenance.

References

1. GBD 2016 Causes of Death Collaborators. Global, regional, and national age-sex specific mortality for 264 causes of death, 1980-2016: a systematic analysis for the Global Burden of Disease Study 2016. Lancet. 2017 Sep 16;390(10100):1151-1210.
2. Kosek M, Bern C, Guerrant RL. Policy and practice the global burden of diarrhoeal disease, as estimated from studies published between 1992 and 2000. Bull World Health Organ. 2003;81(485):197-204.
3. Curtis V, Cairncross S. Effect of washing hands with soap on diarrhea risk in the community: a systematic review. Lancet Infect Dis. 2003 May;3(5):275-81.
4. Cairncross S, Valdmanis V, et al: Water supply, sanitation, and hygiene promotion. In Disease Control Priorities in Developing Countries. New York: Oxford University Press; 2006:771-792.
5. Prüss-Üstün A, Bos R, Gore F, Bartram J. Safer Water, Better Health: Costs, Benefits, and Sustainability of Intervention to Protect and Promote Health. Geneva: World Health Organization; 2008.
6. Al-Zahrani AM, Al-Mushayt AS, Otaibi MF, Wyne AH. Knowledge and attitude of Saudi mothers towards their preschool children's oral health. Pak J Med Sci. 2014 Jul;30(4):720-4.
7. Chen CC, Chiou SJ, Ting CC, Lin YC, Hsu CC, Chen FL, Lee CH, Chen T, Chang CS, Lin YY, Huang HL. Immigrant-native differences in caries-related knowledge, attitude, and oral health behaviors: a cross-sectional study in Taiwan. BMC Oral Health. 2014 Jan 14;14: 3.
8. Odu OO, Emmanuel EE, Amu EO, Deji S, Dada SA, Marcus O. Practice of effective hand washing and associated factors among caregivers of infants attending infant welfare clinics in Ado-Ekiti, Ekiti State, Nigeria. J Adv Med Res. 2017:1-8.
9. Bertrand WE, Walmus BF. Maternal knowledge, attitudes and practice as predictors of diarrhoeal disease in young children. Int J Epidemiol. 1983 Jun;12(2):205-10.
10. Curtis VA, Danquah LO, Aunger RV. Planned, motivated and habitual hygiene behaviour: an eleven-country review. Health Educ Res. 2009 Aug;24(4):655-73.
11. Uner S, Sevencan F, Basaran E, Balci C, Bilaloglu B. Determining of persons knowledge and attitudes on social hand washing who were admitted to a primary health care center. TAF Prev Med Bull. 2009;8(3):207-16.
12. Odu OO, Emmanuel EE, Amu EO, Deji S, Dada SA, Marcus O. Practice of effective hand washing and associated factors among caregivers of infants attending infant welfare clinics in Ado-Ekiti, Ekiti State, Nigeria. J Adv Med Res. 2017:1-8.
13. Currie CE, Elton RA, Todd J, Platt S. Indicators of socioeconomic status for adolescents: the WHO Health Behaviour in School-aged Children Survey. Health Educ Res. 1997 Sep;12(3):385-97.
14. Bartram J, Cairncross S. Hygiene, sanitation, and water: forgotten foundations of health. PLoS Med. 2010 Nov 9;7(11): e1000367.
15. Taddese AA, Dagnew B, Dagne H, Andualem Z. Mother's Handwashing Practices and Health Outcomes of Under-Five Children in Northwest Ethiopia. Pediatric Health Med Ther. 2020 Mar 11;11: 101-108.
16. Ogwezzy-Ndisika AO, Solomon T. Knowledge, attitude and practice of hand washing among mothers of children 0-59 months of age in Lagos Nigeria. Univ J Public Health. 2019;7(2):52-58.
17. Buda AS, Mekengo DE, Lodebo TM, Sadore AA, Mekonnen B. Knowledge, attitude and practice on hand washing and associated factors among public primary school's children in Hosanna town, Southern Ethiopia. J Public Health Epidemiol. 2018;10(6):205-214.
18. Sangra S, Nowreen N. Knowledge, attitude, and practice of mothers regarding nutrition of under-five children: a cross-sectional study in rural settings. Int J Med Sci Public Health. 2019;8(5):392-394.
19. 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.
20. Kumar S, Loughnan L, Luyendijk R, Hernandez O, Weinger M, Arnold F, Ram PK. Handwashing in 51 Countries: Analysis of Proxy Measures of Handwashing Behavior in Multiple Indicator Cluster Surveys and Demographic and Health Surveys, 2010-2013. Am J Trop Med Hyg. 2017 Aug;97(2):447-459.
21. Mekonnen M, Aga F, Kinati T, Shifera D. Assessment of Hand Washing Practice and Associated Factors among Primary School Children in Sebeta Town Oromia Regional State, Ethiopia. Health Sci J. 2018;12(6):1-6.
22. Pang J, Chua SW, Hsu L. Current knowledge, attitude and behaviour of hand and food hygiene in a developed residential community of Singapore: a cross-sectional survey. BMC Public Health. 2015 Jun 21;15: 577.