



A SURVEY ON HAND HYGIENE PRACTICES LEARNT FROM COVID19 PANDEMIC BY URBAN POPULATION IN WEST INDIA

Public Health

**Dr Preeti
Srivastava**

Assistant Professor, S S Jain Subodh P.G. College, Jaipur

ABSTRACT

Introduction- Hand washing with soap (HWWS) was suggested as effective measure for preventing SARS Cov -2 transmission and apart from COVID infection in has benefit in prevention of gastrointestinal infection, soil borne parasitic infection and other respiratory infection therefore this hand hygiene practice if adopted as a life style change could prevent other infections. **Study design-** The present study is a questionnaire based one to access the compliance of general public if they could sustain hand hygiene practices in post pandemic period for better prevention of possible outbreaks in near future. **Results-** The total of 319 respondents participated in the study with 141(44.20%) males and 178 (55.8%) females. The frequency of hand washing in COVID19 pandemic was more than ten times a day as reported by 176(55.2%) of respondents followed by five to ten times per day by 107(33.5%) and less than five times a day by 36(11.3%) of respondents. The post pandemic hand washing frequency showed a decrease as 36(11.3%) respondents reported hand washing frequency of more than ten times a day, 29(9.1%) reporting five to ten times a day and 254(79.60%) respondents with less than five times a day. 204(63.9%) of respondents did not intend to follow hand hygiene practices after COVID19 pandemic phase is over in comparison to 115(36.10%) who wish to follow in post pandemic era. 315 (98.80%) did wash hands after going for toilet, 142 (44.5%) before preparing food, 314(98.4%) before eating food, 82(25.70%) on arrival at home, 81(25.43%) after work, 95(29.80%) before touching face and 273(85.6%) after sneezing and coughing. However the sex wise difference was not statistically significant. The frequencies of hand washing in pandemic and post pandemic time which shows decline in adoption of hand washing frequencies and the result was statistically significant, p value <.05. **Conclusion-** Hand hygiene should be emphasized, nurtured by frequent awareness programs and education so that our population adopts safe hygiene practices as hand hygiene is by far most effective way in curtailing spread of communicable and infectious disease making our masses prepared for future outbreaks.

KEYWORDS

Hand hygiene, hand washing, Post COVID 19 pandemic

It was December 2019 in Hubei Province, China [1,2] the first case of novel SARS-CoV-2 Corona virus, which caused the Corona virus Disease Came to limelight and soon it gripped the entire world as pandemic.[3,4] The first cases of COVID-19 in India were reported on 30 January 2020 in three towns of Kerala, among three Indian medical students who had returned from Wuhan, the epicenter of the pandemic. [5-7] Lockdowns were announced in Kerala on 23 March and in the rest of the country on 25 March. Infection rates started to drop in September. [8]

There was plethora of hand hygiene and other preventive measures that were adopted globally including lockdown, home isolation, quarantine, and social distancing, because it was stated that the virus is transmitted from human-to-human by droplets through coughing and sneezing [9, 10]. The recommendation for frequent hand washing with water and soap or hand sanitizer or at least 60% alcohol was suggested. There have been lot of literature work on effectiveness of these measures in preventing Corona infection, some notable works were by Chu et al. [11], Liang et al. [12] and other analysis [13,14].

Hand washing with soap (HWWS) was suggested as effective measure for preventing SARS Cov -2 transmission [15] and apart from COVID infection in has benefit in prevention of gastrointestinal infection [16], soil borne parasitic infection [17] and other respiratory infection [16] therefore this hand hygiene practice if adopted as a life style change could prevent other infections.

The present study is a questionnaire based one to access the compliance of general public if they could sustain hand hygiene practices in post pandemic period for better prevention of possible outbreaks in near future.

Table-1 Demographic profile of respondents

Characteristic	n	%
Sex wise distribution		
Male	141	44.20%
Female	178	55.80%
Age wise distribution (Years)		
18-20	12	3.80%
20-30	46	14.40%
30-40	54	16.90%
40-50	114	35.70%
50-60	65	20.40%
>60	28	8.80%

Education level			
	Graduate	31	9.70%
	Undergraduate	13	4.10%
	Post graduate	275	86.20%
Occupation			
	Business	58	18.20%
	Govt employee	116	36.40%
	Private employee	60	18.80%
	Health care	28	8.80%
	Teaching	28	8.80%
	Unemployed	29	9.10%
Source of water used			
	Normal	101	31.60%
	Purifier	218	68.40%
Scarcity of water			
	Yes	59	18.50%
	No	260	81.50%

Table 2 – Respondents attitude towards hand washing practices

Frequency of hand washing in pandemic	Total (%)	Male	Female	P value
< 5 times	36 (11.3%)	23	13	.490
5-10 times	107(33.5%)	94	82	
> 10 times	176 (55.2%)	61	46	
Frequency of hand washing post pandemic				P value
< 5 times	254 (79.60%)	148	106	.090
5-10 times	29 (9.1%)	14	22	
> 10 times	36 (11.3%)	16	13	
Intention to follow hand hygiene post pandemic				P value
Yes	115 (36.10%)	67	48	.657
No	204 (63.90%)	117	93	
Hand washing after toilet				P value
Yes	315 (98.80%)	175	140	.436
No	4 (1.2%)	3	1	
Hand washing before preparing food				P value
Yes	142 (44.5%)	89	53	.026
No	177(55.605)	89	88	
Hand washing before eating food				P value
Yes	314 (98.4%)	175	139	.849
No	5(1.60%)	3	2	

Hand washing on arrival to home				P value .845
Yes	82(25.7%)	45	37	
No	237(74.3%)	133	104	
Hand washing after work				P value .959
Yes	81 (25.4%)	45	36	
No	239(74.5%)	133	105	
Hand washing before face touching				P value .323
Yes	95 (29.80%)	49	46	
No	224(60.2%)	129	95	
Hand washing after sneezing coughing				P value .593
Yes	273 (85.6%)	154	119	
No	46(14.4%)	24	22	

Table -3 Comparison in pandemic and post pandemic period for hand washing practice

Hand washing frequency	< 5 times	5-10 times	> 10 times	Total	P value
Pandemic time	36(11.3%)	107(33.5%)	176(55.2%)	319	<.000 01
Post pandemic time	254(79.60%)	29 (9.1%)	36 (11.3%)	319	

MATERIAL AND METHODS

The study was conducted as an online survey regarding hand hygiene practices that were adopted in COVID19 pandemic. The participants were all adults who were available for interaction on whatsapp group. There were in all 375 participants with 319 valid responses who answered all parts of questionnaire. The identity of participants was anonymous. The questionnaire was based on previous studies regarding hand hygiene and attitude of people towards it. [18,19]

The data analysis was carried out using online free statistical software and chi square test were performed to assess significance between variable with $p < .05$ considered as significant.

RESULTS

The total of 319 respondents participated in the study with 141(44.20%) males and 178 (55.8%) females. The most common age group was 40-50 year followed by 50-60 year with 20.4% and least number of participants in above 60 year age group with 8.8% respondents.

The majority of respondents were post graduates 275(86.2%). In terms of work, 116 (36.40%) were government employees, 58(18.20%) business and private sector followed by 28(8.8%) in health care and teaching respectively. 101(31.6%) respondents used normal water while 218 (68.40%) used purified water at home. Majority of respondents 260(81.5%) did not report any scarcity of water while 59(18.56%) had to face water shortage at place of living. (Table-1)

Table-2 shows the trends and practice of hand hygiene followed by respondents. The frequency of hand washing in COVID19 pandemic was more than ten times a day as reported by 176(55.2%) of respondents followed by five to ten times per day by 107(33.5%) and less than five times a day by 36(11.3%) of respondents. The post pandemic hand washing frequency showed a decrease as 36(11.3%) respondents reported hand washing frequency of more than ten times a day, 29(9.1%) reporting five to ten times a day and 254(79.60%) respondents with less than five times a day. 204(63.9%) of respondents did not intend to follow hand hygiene practices after COVID19 pandemic phase is over in comparison to 115(36.10%) who wish to follow in post pandemic era.

There were set of seven questions framed to explore in detail hand hygiene. 315 (98.80%) did wash hands after going for toilet, 142 (44.5%) before preparing food, 314(98.4%) before eating food, 82(25.70%) on arrival at home, 81(25.43%) after work, 95(29.80%) before touching face and 273(85.6%) after sneezing and coughing. However the sex wise difference was not statistically significant. Table-3 shows comparison of frequencies of hand washing in pandemic and post pandemic time which shows decline in adoption of hand washing frequencies and the result was statistically significant, p value $< .05$.

DISCUSSION

The aim of present study was to examine hand hygiene practice in an emerging metropolitan city in western India in COVID pandemic and its aftermath. The COVID19 outbreak in initial months created panic

and fear making people adopt to hand washing and other hygiene practices quickly with sort of paranoid behavior. Our study found statistically significant difference for hand washing practices, its frequency in pandemic and post pandemic era. Similar trends were observed by other studies in US [20] and Hong Kong [21]. The practice of hand hygiene that increased in pandemic could not be sustained in post pandemic era.

It is an eye opener for policy makers, epidemiologists as it clearly reflects that we need to educate masses continuously so that the momentum and change in perception that pandemic brought in terms of hand hygiene practices is not lost and the gains are not washed away.

The practice of hand washing after toilet use and after sneezing or coughing remain high 98.80% and 85.6% respectively but for others like before preparing food, before eating, on arrival at home, after work and before touching face the practice of hand washing wasn't satisfactory.

It is interesting to note that the practice of hand washing before preparing food lower in woman than men and difference was statistically significant. It is also to note that in our study the majority of population is post graduates and quite possible that changing role of female from housekeeper to active working member has resulted in this shift and so possible that hand washing before preparing food is attributed to this changing socioeconomic scenario. The other differences did not show sex wise significant differences, findings of current study are similar to those reported by Park et al [21]. In the present study majority of respondents did not have scarcity of water in their premises and therefore a major impediment to hand washing was not faced by the respondent population which is one of detrimental force in adopting hand hygiene as reported in literature studies. [18] Majority of respondents used water purifier system at home indicating the sensitization of growing urban population towards safe water as reported in other studies. [22]

It is of utmost importance that hand washing practices and hygiene adopted in pandemic are nurtured and facilities of hand washing be made available to masses and public at malls, work place, entry points to public places so that lessons learnt during pandemic are put into practice.

There were few limitations of the present study as the survey was conducted in online mode therefore exact population sampling might be compromised in a country like India with diverse socioeconomic strata and education level. There were no illiterate respondents in study. Most have availability of safe drinking water without scarcity therefore a randomized study design might be more representative from general population which was difficult to obtain in the present study. The other studies from Asian countries estimated that 17% of respondents adopted safe hand washing practices in post pandemic era, it is possible that the self reporting might project the study population more compliant with actual practice. [23]

CONCLUSION

The present study is an attempt to elucidate hand washing practices in urban population in Indian city and suggest that changed and more aware behavior towards hand hygiene should be emphasized, nurtured by frequent awareness programs and education so that our population adopts safe hygiene practices as hand hygiene is by far most effective way in curtailing spread of communicable and infectious disease making our masses prepared for future outbreaks.

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