

Original Research

Pattern of Hygiene Practice among Health Care Workers Working in Covid Hospitals of North 24 Parganas during Covid 19 Pandemic

Papiya Roychowdhury¹, Saikat Roychowdhury²

¹Senior Resident, Department of Community Medicine, Dr. B.N BOSE SDH, West Bengal, India;

²Senior lecturer, Department of Periodontology, KSD Jain Dental College & Hospital, Kolkata, West Bengal, India

ABSTRACT:

Background: Health workers in contact with and/or who care for COVID-19 patients are at a higher risk of infection than the general population. The present study was conducted to assess pattern of hygiene practice among health care workers working in different covid hospitals under north 24 Parganas during covid 19 pandemic. **Materials & Methods:** 460 health care workers working in different covid hospitals under north 24 Parganas of both genders were provided a semi-structured self-administered questionnaire related to hand hygiene, face mask related practices and surface contamination related practices. HCWs were clinical (Group I) such as doctors and nurses and para-clinical staff (Group II) comprised of all the other categories of health care workers. **Results:** Performance of handwash with soap and water in the past 1 hour was nil in 20%, once in 65% and >1 in 15% in group I and 25%, 55% and 20% in group II, frequency of touching the outer surface of the mask in the past 15 minutes was nil in 45% and 40%, 1-2 times in 30% and 35% and >2 times in 15% and 25% in group I and II respectively, frequency of pulling down the face mask below nose in the past 1 hour was nil in 30% and 25%, 1-2 times in 65% and 50% and >2 times in 5% and 25% in group I and II respectively. Frequency of touching outer surfaces (eg: door handles) was nil in 42% and 20%, 1-2 times in 48% and 60% and >2 times in 10% and 20% in group I and II respectively. The difference was significant (P< 0.05). **Conclusion:** Doctors and nurses had good hand hygiene practice as compared to other categories of health care workers, hence there is need to educate them regularly.

Key words: Doctors, Nurses, health care workers

Received: 18 May, 2021

Accepted: 22 June, 2021

Corresponding author: Papiya Roychowdhury, Senior Resident, Department of Community Medicine, Dr. B.N BOSE SDH, West Bengal, India

This article may be cited as: Roychowdhury P, Roychowdhury S. Pattern of Hygiene Practice among Health Care Workers Working in Covid Hospitals of North 24 Parganas during Covid 19 Pandemic. J Adv Med Dent Scie Res 2021;9(7):124-128.

INTRODUCTION

Standard precautions for patient care are a set of practices that have been advocated and cultivated for providing protection to health care workers (HCWs) and to prevent transmission from patient to patient within an institution of medical care.¹ Increased knowledge and advanced technology have instilled a sense of confidence against the pathology that are prevalent in our surroundings.² Health care providers now, do not work with a constant sense of fear of contracting a disease, but in a state of caution, following practices as and when required depending on infectiousness, mode of transmission and virulence of the causative organism.³

Health workers in contact with and/or who care for COVID-19 patients are at a higher risk of infection than the general population. Mitigating and reducing

this risk is essential to protecting their well-being and reducing the spread of COVID-19.⁴ Available scientific evidence suggests that appropriate personal protective equipment use, hand hygiene best practices, implementation of universal masking policies in health care facilities and adequate infection prevention and control (IPC) training and education are associated with decreased risk of COVID-19 among health workers.⁵

It is seen that hand hygiene, an essential component of infection prevention and control (IPC), is often neglected by HCWs both in developed and developing countries, with compliance rates sometimes dipping below 20%.⁴ Hence, sensitization and training on hand hygiene, personal protective equipments, respiratory hygiene and proper use of masks were given to all health care workers irrespective of their

role in the hospital.⁶ The present study was conducted to assess pattern of hygiene practice among health care workers during covid 19 pandemic.

OBJECTIVES

1.To assess the pattern of hygiene practice among health care workers during covid 19 pandemic.

MATERIALS & METHODS

STUDY TYPE & DESIGN

Hospital based Descriptive study with cross sectional design.

STUDY PERIOD

July 2020 to August 2020.

STUDY SETTING

The present study was conducted among the doctors and other Health care workers working in various Covid Hospitals of North 24 Parganas.

STUDY POPULATION

The present study comprised of 460 health care workers currently working in various Covid Hospitals of North 24 Parganas at the time of the study of both genders who agreed to participate in the study with their written consent.

- Exclusion criteria
 - Persons not willing to participate
 - Persons who could not be contacted even after two attempts

A cross sectional survey was conducted across the hospital in the period July 2020 to August 2020 to assess the standard practices that were followed by health care providers at various covid hospitals. In a study by Agarwal et al titled “Are health care workers following preventive practices in the COVID-19 pandemic properly? A cross-sectional survey from India”, the proportion of HCWs who touched outer

surface of the mask was 35.98%.³ Applying this into the formula,

$$N = Z^2(1-\alpha/2)P(1-P)/d^2$$

with an alpha error of 5% and absolute precision at 5%, the minimum sample to be studied was 368. Convenient sampling was done. A semi-structured self-administered questionnaire was provided through an online platform with aid from the IT department. Questions were subclassified under 3 categories (a) hand hygiene (b) face mask related practices and (c) surface contamination related practices.

SAMPLING TECHNIQUE

Convenient sampling

STUDY TOOLS

Reseachers Administered Questionnaire

STUDY TECHNIQUE

Interview

Data pertaining to each subject such as name, age, gender etc. was recorded. A semi-structured self-administered questionnaire was provided through an online platform. Questions were related to hand hygiene, face mask related practices and surface contamination related practices. HCWs were clinical (Group I) such as doctors and nurses and para-clinical staff (Group II) comprised of all the other categories of health care workers. Results of the study was subjected to statistical analysis. P value less than 0.05 was considered significant.

DATA ANALYSIS

Data was analysed using IBM SPSS version 20.0 and presented in tables and diagrams using the principles of descriptive statistics.

ETHICAL CONSIDER

Ethical approval was taken from the concerned authority. Anonymity and confidentiality of all responses was ensured.

RESULTS

Table I Distribution of subjects

Groups	Group I (260)	Group II (200)
Status	Doctors, Nurses	Other HCWs
M:F	160:100	80:120

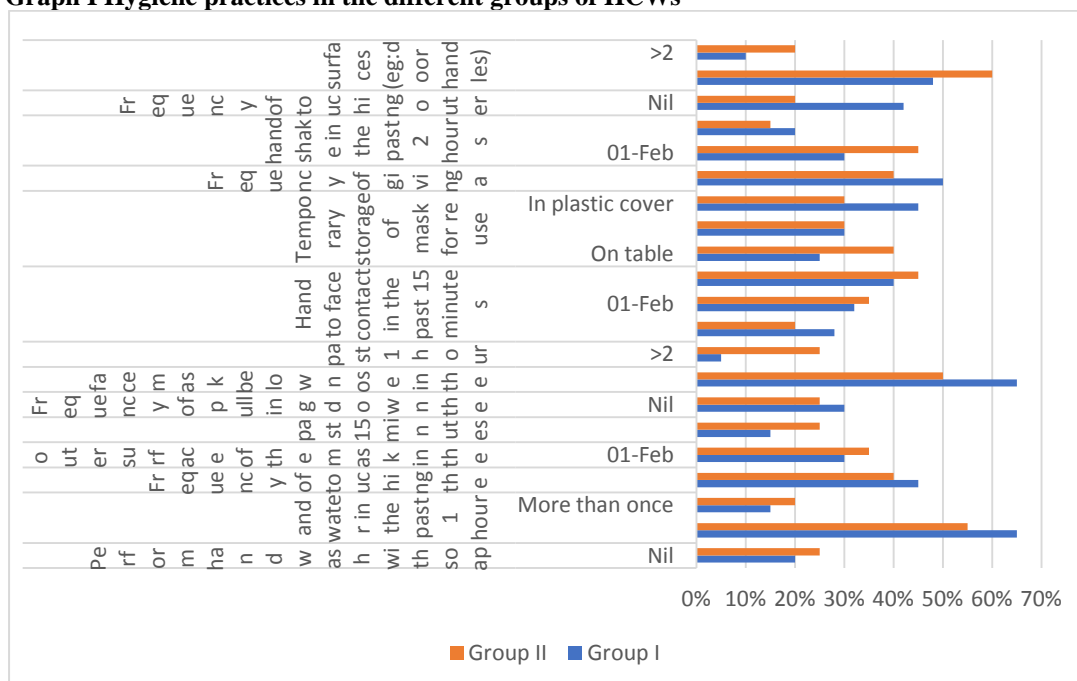
Table I shows that group I had 160 males and 100 females and group II had 80 males and 120 females.

Table II Hygiene practices in the different groups of HCWs

Questionnaire	Parameters	Group I	Group II	P value
Perform handwash with soap and water in the past 1 hour	Nil	20%	25%	0.05
	Once	65%	55%	
	More than once	15%	20%	
Frequency of touching the outer surface of the mask in the past 15 minutes	Nil	45%	40%	0.04
	1-2	30%	35%	
	>2	15%	25%	
Frequency of pulling down the face mask below nose in the past 1 hour	Nil	30%	25%	0.01
	1-2	65%	50%	
	>2	5%	25%	
Hand to face contact in the past 15 minutes	Nil	28%	20%	0.12
	1-2	32%	35%	
	>2	40%	45%	
Temporary storage of mask for re use	On table	25%	40%	0.03
	In bag	30%	30%	
	In plastic cover	45%	30%	
Frequency of giving a handshake in the past 2 hours	Nil	50%	40%	0.15
	1-2	30%	45%	
	>2	20%	15%	
Frequency of touching outer surfaces (eg:door handles)	Nil	42%	20%	0.01
	1-2	48%	60%	
	>2	10%	20%	

Table II, graph I shows that performance of handwash with soap and water in the past 1 hour was nil in 20%, once in 65% and >1 in 15% in group I and 25%, 55% and 20% in group II, frequency of touching the outer surface of the mask in the past 15 minutes was nil in 45% and 40%, 1-2 times n 30% and 35% and >2 times in 15% and 25% in group I and II respectively, frequency of pulling down the face mask below nose in the past 1 hour was nil in 30% and 25%, 1-2 times in 65% and 50% and >2 times in 5% and 25% in group I and II respectively, hand to face contact in the past 15 minutes was nil in 28% and 20%, 1-2 times in 32% and 35% and >2 in 40% and 45% in group I and II respectively, temporary storage of mask for re use was on table in 25% and 40%, in bag in 30% and 30% and in plastic cover in 45% and 30% in group I and II respectively, frequency of giving a handshake in the past 2 hours was nil in 50% and 40%, 1-2 in 30% and 45% and >2 in 20% and 15% in group I and II respectively, frequency of touching outer surfaces (eg:door handles) was nil in 42% and 20%, 1-2 times in 48% and 60% and >2 times in 10% and 20% in group I and II respectively. The difference was significant (P< 0.05).

Graph I Hygiene practices in the different groups of HCWs



DISCUSSION

Health workers, in particular those in contact with and/or who care for COVID-19 patients, are at higher risk of being infected with SARS-CoV-2 than the general population.⁷ Data collected by the World Health Organization (WHO) global surveillance for COVID-19, primarily from European and American countries, estimate that approximately 14% of COVID-19 cases reported to WHO are among health workers.⁸ Transmission of the SARS-CoV-2 virus to health workers has been documented to occur in both acute care and long-term care settings; from patients and residents to health workers as well as among health workers, also potentially associated with exposures to infected co-workers in common areas and break rooms.⁹ As the pandemic evolves, studies indicate that transmission involving health workers is also occurring in community settings (such as in households) in addition to health care settings. COVID-19 infections among health workers may lead to a depleted workforce during a time when the demand on the health care system has increased. In addition, health workers who are infected are at risk of transmitting SARS-CoV-2 virus to others in households and other community settings.¹⁰ The present study was conducted to assess pattern of hygiene practice among health care workers during covid 19 pandemic.

In present study, group I had 160 males and 100 females and group II had 80 males and 120 females. John et al¹¹ assessed the hand and respiratory hygiene practices across the hospital. Among the 501 respondents, 83.4% were females with a mean age of 30.78±8.48 years. Nursing staff were the majority (57.88%) followed by nonclinical and para clinical staff (20.77%). Of the study population, 96.6% performed hand wash and 97.2% refrained from giving handshakes in the previous hour. Over 60% maintained proper face mask practices. Undoing the lower tie of the mask first, was answered by 76.67% while 7.2% felt the sequence was irrelevant. Touching common surfaces were avoided by 46.3% of them, while 95% immersed their hospital attire in soap and water for 15 minutes. It was seen that a greater proportion of clinical staff had better practices when compared to para clinical and the difference statistically significant. There was no significant variation of practices with age.

We observed that performance of handwash with soap and water in the past 1 hour was nil in 20%, once in 65% and >1 in 15% in group I and 25%, 55% and 20% in group II, frequency of touching the outer surface of the mask in the past 15 minutes was nil in 45% and 40%, 1-2 times in 30% and 35% and >2 times in 15% and 25% in group I and II respectively. In a study by Olum et al¹² among 136 health care providers in Nepal, 74% and 22% washed hands always and occasionally after seeing a patient respectively, while 4% responded that they never did that.

We found that frequency of pulling down the face mask below nose in the past 1 hour was nil in 30% and 25%, 1-2 times in 65% and 50% and >2 times in 5% and 25% in group I and II respectively, hand to face contact in the past 15 minutes was nil in 28% and 20%, 1-2 times in 32% and 35% and >2 in 40% and 45% in group I and II respectively, temporary storage of mask for re use was on table in 25% and 40%, in bag in 30% and 30% and in plastic cover in 45% and 30% in group I and II respectively. Early detection of SARS-CoV-2 infection among health workers can be achieved through syndromic surveillance and/or laboratory testing and is a key strategy to prevent secondary transmission from health workers to patients, between health workers throughout health-care settings and from health workers to contacts outside of health facilities. A national and/or local surveillance and testing strategy should be developed and implemented.¹³

We observed that frequency of giving a handshake in the past 2 hours was nil in 50% and 40%, 1-2 in 30% and 45% and >2 in 20% and 15% in group I and II respectively, frequency of touching outer surfaces (eg:door handles) was nil in 42% and 20%, 1-2 times in 48% and 60% and >2 times in 10% and 20% in group I and II respectively. All health services should have an occupational health and safety policy and programme including occupational health focal point or occupational health service; labour-management committee for health and safety; regular workplace risk assessment covering all hazards and the effectiveness of their controls; immunizations.¹⁴

CONCLUSION

Authors found that doctors and nurses had good hand hygiene practice as compared to other categories of health care workers, hence there is need to educate them regularly.

ACKNOWLEDGEMENTS

The authors thank all study participants for giving their valuable time, all superintendents of various Covid Hospitals.

Funding: No funding sources

Conflict of interest: None declared

REFERENCES

1. Mahajan NN, Mathe A, Patokar GA, Bahirat S, Lokhande PD, Rakh V, et al. Prevalence and Clinical Presentation of COVID-19 among Healthcare Workers at a Dedicated Hospital in India. *J Assoc Physicians India*. 2020;68(12):16-21.
2. Angrup A, Kanaujia R, Ray P, Biswal M. Healthcare facilities in low- and middle-income countries affected by COVID-19: Time to upgrade basic infection control and prevention practices. *Indian J Med Microbiol*. 2020;38(2):139-43.
3. Anargh V, Singh H, Kulkarni A, Kotwal A, Mahen A. Hand hygiene practices among health care workers (HCWs) in a tertiary care facility in Pune. *Med J Armed Forces India*. 2013;69(1):54-6.

4. Roshan R, Feroz AS, Rafique Z, Virani N. Rigorous Hand Hygiene Practices Among Health Care Workers Reduce Hospital-Associated Infections During the COVID-19 Pandemic. *J Prim Care Community Health*. 2020;11:31.
5. Limbu DK, Piryani RM, Sunny AK. Healthcare workers' knowledge, attitude and practices during the COVID-19 pandemic response in a tertiary care hospital of Nepal. *PLoS One*. 2020;15(11):242126.
6. Ashinyo ME, Dubik SD, Duti V, Amegah KE, Ashinyo A, Asare BA, Ackon AA, et al. Infection prevention and control compliance among exposed healthcare workers in COVID-19 treatment centers in Ghana: A descriptive cross-sectional study. *PLoS One*. 2021;16(3):248282.
7. Cooper S, Wiyeh A, Schmidt BM, Wiysonge CS. Cochrane corner: factors that influence compliance by healthcare workers with infection prevention and control guidelines for COVID-19 and other respiratory infections. *Pan Afr Med J*. 2020;35(2):23.
8. Desta M, Ayenew T, Sitotaw N, Tegegne N, Dires M, Getie M. Knowledge, practice and associated factors of infection prevention among healthcare workers in Debre Markos referral hospital, Northwest Ethiopia. *BMC Health Serv Res*. 2018;18(1):465.
9. Agarwal A, Ranjan P, Saraswat A, Kasi K, Bharadiya V, Vikram N, et al. Are health care workers following preventive practices in the COVID-19 pandemic properly? - A cross-sectional survey from India. *Diabetes Metab Syndr*. 2021;15(1):69-75.
10. Lotfinejad N, Peters A, Pittet D. Hand hygiene and the novel coronavirus pandemic: the role of healthcare workers. *J Hosp Infect*. 2020;105(4):776-7.
11. John S, Subrahmanian SA, Xavier RT. Pattern of hygiene practices among health care workers during the COVID-19 pandemic: a tertiary health care experience from Central Kerala. *Int J Community Med Public Health* 2021;8:2952-7.
12. Olum R, Chekwech G, Wekha G, Nassozi DR, Bongomin F. Coronavirus Disease-2019: Knowledge, Attitude, and Practices of Health Care Workers at Makerere University Teaching Hospitals, Uganda. *Front Public Health*. 2020;8:181.
13. Garcia-Basteiro AL, Moncunill G, Tortajada M, Vidal M, Guinovart C, Jiménez A, et al. Seroprevalence of antibodies against SARS-CoV-2 among health care workers in a large Spanish reference hospital. *Nat Commun*. 2020 Dec 8;11(1):3500.
14. Nagler AR, Goldberg ER, Aguero-Rosenfeld ME, Cangiarella J, Kalkut G, Monahan CR, et al. Early Results from Severe Acute Respiratory Syndrome Coronavirus 2 Polymerase Chain Reaction Testing of Healthcare Workers at an Academic Medical Center in New York City. *Clin Infect Dis*. 2020 Jun 28.