

**TO STUDY THE KNOWLEDGE, ATTITUDE AND PRACTICE OF HAND-WASHING
AMONG HEALTH CARE WORKERS IN A TERTIARY CARE HOSPITAL DURING
COVID 19 PANDEMIC**Sajad Bhat^{*1}, Nowsheen Zaffer¹, Haroon Rashid¹ and Abdul Hakim²¹Department of Hospital Administration Sher I Kashmir Institute of Medical Sciences Soura Srinagar.²All India Institute of Medical Sciences New Delhi.***Corresponding Author: Dr. Sajad Bhat**

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ABSTRACT

Hand hygiene is important to reduce potential risk of transmission of microorganisms to patients, to reduce health care worker infection caused by organisms acquired from the patient, to reduce morbidity, mortality and costs associated with health care associated infections especially during COVID 19. **AIM:** The objectives of this study was to assess the knowledge, attitude and practice of hand-washing among HCPs and also identify factors that motivate and constraint against hand washing practices amongst HCPs during COVID 19. **Methods:** A cross-sectional descriptive, study was carried out to assess the knowledge, attitude and practice of hand washing among healthcare workers at Sher-i- Kashmir Institute of Medical Sciences.(SKIMS) during COVID 19 pandemic. A self structured questionnaire was prepared containing questions to asses knowledge, attitude and practice of hand washing. A total of 88 health care workers participated in the study including 23 doctors, 37 nurses, 11 technicians and 17 nursing aids. A scoring system was used where 1 point was given for each correct response to knowledge, positive attitudes and good practices. 0 was given for incorrect knowledge, negative attitudes and poor practices. A score of more than 75% was considered good, 50-74% moderate and less than 50% poor. **Results:** It was observed that in COVID 19 pandemic the HCWs had very good knowledge, attitude and practice towards hand hygiene practices. Almost 100% (n=88) said that contaminated hands is a vehicle for transmission of infections in hospitals. It was observed that majority of the respondents were having a positive attitude towards hand hygiene as the all affirmed that they adhere to hand hygiene practice all the time. When the respondents were asked about practice of hand hygiene, almost all of them told that they wash hands before patient contact and bedside procedure. **Conclusion:** The study concluded that the hcw's had a good knowledge attitude and practice of hand hygiene which needs to be maintained. The same can be improved by regular training sessions and sensitizing the staff about need of regular hand washing.

KEYWORDS: Hand Hygien, HCW: health care worker, HCP: helath care professional.**INTRODUCTION**

The recent COVID-19 pandemic has resulted in increased hand hygiene and hand cleansing awareness. To prevent virus transmission, the Centers for Disease Control and Prevention recommends frequent hand washing with soap and water. Hand hygiene is a widely accepted principle in the prevention of disease transmission because proper hand hygiene has a 24% to 31% likelihood of decreasing the spread of transmissible disease.^[1,2] COVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is an enveloped, unsegmented, positive-sense RNA virus.^[3]

The importance of hand hygiene was recognized as early as 1840s, by Dr. Oliver Wendell Holmes to prevent childbed fever and in the late 1840s, by Dr. Ignaz Semmelweis to reduce maternal mortality in a Vienna

Hospital, however, adherence still remains low in most of the health care institutions.^[4]

Hand hygiene is one of the most important procedures for preventing the transmission of healthcare associated infections. Hand hygiene is a general term that encompasses hand washing, antiseptic hand wash, antiseptic hand rubs or surgical hand antisepsis. Proper hand hygiene plays a critical central role in any infection control program.^[5]

Hand hygiene is important to reduce potential risk of transmission of microorganisms to patients, to reduce health care worker infection caused by organisms acquired from the patient, to reduce morbidity, mortality and costs associated with health care associated infections. Education is the corner stone in improving hand hygiene practices. When hands are visibly dirty or

contaminated with blood or body fluids hands should be washed with soap and water.^[6]

Hand hygiene is the single most important element of strategies to prevent Health Care-Associated Infection (HCAI). Improper Hand hygiene by healthcare workers is responsible for about 40% of Nosocomial infections.^[7] Despite the relative simplicity of this procedure, adherence to hand washing recommendations is unacceptably low; usually well below 50%.^[8]

According to the Centers for Disease Control and Prevention (CDC), the virus is currently believed to spread via direct contact, indirect contact, and droplet contact. To prevent virus transmission, the CDC recommends frequent hand washing with soap and water for 20 seconds; alternatively, if soap and water are unavailable, hand sanitizer containing at least 60% alcohol can be used.^[9]

The CDC reports HAIs as the most common adverse hospital-related event affecting one in 25 patients during their hospital stays and resulting in more than 99 000 deaths per year.^[10] In the recent few months, when the new strain of corona virus (COVID-19) outbreak was observed around the world; several structural and behavioral changes were made to the hospitals around the globe to ensure infection prevention. These changes include stricter visitation policies, new sanitation guidelines, development of negative pressure isolation rooms, PPE (personal protection equipment) usage for caregivers and HCWs, and so on.^[11] The COVID-19 pandemic has presented significant uncertainty into the hospital environment and thus workflow, including timing of essential medical procedures, foreseeing and managing patient inflows, and swiftly evolving guidelines on patient management.^[12] WHO recommends that HCWs should perform hand hygiene using the proper technique and known as

“My 5 moments for hand hygiene,” that is, before touching a patient, before clean/aseptic procedure, after procedure/body fluid exposure, after touching a patient, and after touching a patient’s surroundings. In particular, before putting on PPE and after removing it, when changing gloves, after any contact with a patient with suspected or confirmed COVID-19 virus, their waste, or the environment in the patients’ immediate surroundings, after contact with any respiratory secretions, before food preparation and eating, and after using the toilet.^[13]

The objectives of this study were thus; to assess the knowledge, attitude and practice of “hand-washing”, identify the hand washing and hand-drying methods commonly used by the HCPs and also identify factors that motivate and constraint against hand washing practices amongst HCPs at Sher-i- Kashmir Institute of Medical Sciences, Kashmir, India. The information thus generated from the present study will help the hospital administrators and the infection control committee of the

hospital to take appropriate steps for the successful implementation of hand hygiene policy at Sher-i-Kashmir Institute of Medical Sciences.

METHODOLOGY

A cross-sectional descriptive, study was carried out to assess the knowledge, attitude and practice of hand hygiene among healthcare workers at Sher-i- Kashmir Institute of Medical Sciences.(SKIMS) during COVID 19 pandemic. The study was carried out for a period of one month from 1st November 2020 to 30th Nov 2020 in the maternity hospital of SKIMS. A self structured questionnaire was prepared containing questions to assess knowledge, attitude and practice of hand hygiene. The questionnaire in addition to demographic characteristics, qualification and experience of staff, contained six questions for assessing knowledge, 7 questions for attitude. To assess the practice the questionnaire contained eight questions. To assess the practice of hand washing the researcher observed the staff for a period of one week to know the actual scenario. A total of 88 health care workers participated in the study including 23 doctors, 37 nurses, 11 technicians and 17 nursing aids. The questionnaire was distributed among the staff and was asked to report back questionnaire within one week. Respondents who failed to report back the questionnaire were excluded from the study. A scoring system was used where 1 point was given for each correct response to knowledge, positive attitudes and good practices. 0 was given for incorrect knowledge, negative attitudes and poor practices. A score of more than 75% was considered good, 50-74% moderate and less than 50% poor.

RESULTS

Hand hygiene is the most important tool in preventing the transmission of Nosocomial infections as the hands of HCWs are the most common mode of transmission of pathogens to patients. These infections can be life-threatening and difficult to treat. Health care associated infections can be received from infected or draining wounds, frequently colonized areas of the intact patient’s skin, patient’s gowns, bed linen, bedside furniture and other objects in the immediate environment of the patient. A total of 88 questionnaires were distributed and 88 were returned back giving a response rate of 100%.

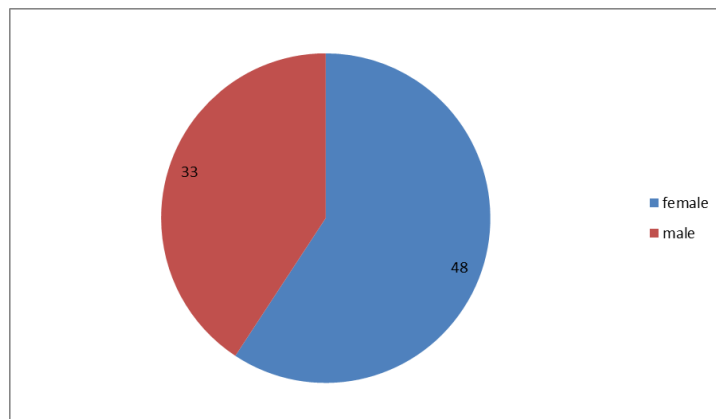
Table 1: Shows cadre of HCW’s.

Designation	Number	Percentage (%)
Doctors	23	26.1%
Nurses	37	42%
Technicians	11	12.5%
Nursing aids	17	19.4%
Total	88	100%

Majority of staff were in the age group of 25 to 50 years viz 72.8% followed by > 50 yrs , 18.2%.

Table 2: Age of HCW's.

	Number	Percentage (%)
<25yrs	8	9%
25 – 50 yrs	64	72.8%
>50yrs	16	18.2%
Total	88	100%

**Figure 1: Gender Distribution of HCW's**

In our study female were 54.5% (n=48) and males were 45.5% (33)

Table 3: Marital status of HCW's.

Marital status	Number of HCW'S	Percentage (%)
Single	37	42%
Married	51	58%
Total	88	100%

Regarding experience of staff 62.5% were having time since recruitment 1 to 10 yrs, 21.6% had time since recruitment 10 to 20 yrs. Time since recruitment was <1

year and <20 yrs for 9% and 6.9% of staff who participated in the study.

Table 4: Time since recruitment of HCW's.

Time in years	Number of HCW'S	Percentage (%)
< 1 yr	8	9%
1-10 yrs	55	62.5%
10 -20yrs	19	21.6%
>20 yrs	6	6.9%
Total	88	100%

Knowledge of hand hygiene

On assessment of knowledge about hand hygiene of respondents showed that they good knowledge (>90%) of hand hygiene. Almost 100% (n=88) said that

contaminated hands is a vehicle for transmission of infections in hospitals. Most of the respondents were aware that they have to wash hands before and after touching a patient.

	Questions to asses knowledge	Yes	No
1	Contaminated hands is a vehicle for transmission of infections	88(100%)	0(0%)
2	Effective Hand Washing should last for at least 30 seconds	76(86.4%)	12(13.6%)
3	Impact of Nosocomial Infection on patient's clinical outcome	79(89.8%)	9(10.2%)
4	Effectiveness of hand washing in preventing Nosocomial Infection	85(97%)	3(3%)
5	Hand Washing helps in improvement of health environment in hospital	86(98%)	2(2%)
6	Suitable time/times for hand washing in hospital		
	a) Before starting the Examination	87(99%)	1(1%)
	b) After examination of patient	88(100%)	0(0%)
	c) Both Before and after examination of every patient	83(94.3%)	5(5.7%)

d) Neither before nor after examination	0(0%)	88(100%)
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Attitude towards hand washing

It was observed that majority of the respondents were having a positive attitude towards hand hygiene as the all

affirmed that they adhere to hand hygiene practice all the time. On assessment it was observed that attitude was good towards hand hygiene (score >90%).

Questions to asses attitude of hand washing	Yes	No
1 I adhere to correct hand hygiene practices at all times	88(100%)	0(0%)
2 Sometimes I have more things to do than hand hygiene	8(9%)	80(91%)
3 Sometimes I miss out hand hygiene simply because I forget it	3(3.4%)	85(96.6%)
4 Emergencies and other priorities make hygiene more difficult at times	17(19.3%)	71(70.7%)
5 I feel guilty if I omit hand hygiene	46(52.3%)	32(47.7%)
6 Adhering to hand hygiene practices is easy in the current setup	59(67%)	29(33%)

Practice of hand washing

When the respondents were asked about practice of hand hygiene, almost all of them told that they wash hands

before patient contact and bedside procedures. The HCWs practiced hand hygiene most of the times (score>85%).

Questions for checking the practice	Yes	No
Wash hands before patient contact or bed side procedure	88(100%)	0(0%)
Wash hands after patient contact or bed side procedure	84(94.5%)	4(5.5%)
Dry hands after Washing	84(94.5%)	4(5.5%)
Washing hands after the close of work	73(83%)	15(17%)
Use of Running Tap water only	10(11.4%)	78(88.6%)
use of running tap water and antiseptic soap	81(92%)	7(8%)
use of alcohol based hand rub only	85(96.7%)	3(3.3%)
Not washing hands	0 (0%)	88(100%)

The HCW's who participated in the study told that major motivation to hand washing is that it protects them against infections and prevents Nosocomial infections

within the hospital. However the major constraint to hand washing as per them was busy work schedule and non availability of hand sanitizers to them.

Major motivation to hand washing	Major constraint to hand washing
1. Self protection	1. Busy schedule
2. Prevention of Nosocomial infection	2. Availability of hand sanitisers

Practice of hand hygiene

At the end of the study the staff were observed for one week to see the actual practice of hand hygiene and it was seen that they hand wash rate was around 88.46% among total number of opportunities of hand washing.

No of hand hygiene opportunities:	156
No of observed hand hygiene actions:	138
Ratio	88.46

DISCUSSION

Hand hygiene is the first effective basic action to prevent infection among populations inside and outside of hospitals. The preparations to simplest infection prevention must take place for health-care students during their colleges before joining health-care organizations as future health-care workers. Factors that contribute to poor adherence to hand hygiene include poor access to hand-washing facilities (sinks), the time required to perform standard hand washing, irritant contact dermatitis associated with frequent exposure to soap and water, high workloads, knowledge deficits among HCWs, and the failure of administrative leaders

to make hand hygiene an institutional priority.¹⁴ Hand washing has been considered to be a cost-effective tool in the control of HAIs and is accepted throughout the health community as a basic clinical procedure essential for safety of patients and HCWs alike.^{15,16} In the present study it was observed that majority of respondents had adequate knowledge about hand hygiene. They were well aware of the facts like contaminated hands are a source of infection, hands should be washed before and after procedure and hand hygiene helps in prevention of Nosocomial infection. Majority of respondents viz 90 to 100 % replied correctly when asked about these facts.

Regarding the attitude towards hand hygiene it was observed that staff had a good attitude towards hand hygiene practices. Almost 80 to 90 % replied correctly when asked about whether they adhere to hand hygiene practices or if they miss hand washing when needed.

When asked about the practice of hand about their practice regarding hand washing majority of respondents told that they wash hands before and after bed side procedures and at the end of their work. Also they used

alcohol based hand rubs routinely. The same was confirmed at the end of the study by observational study of one week which showed HCW's practiced hand washing rate was almost 88%.

It is observed that the respondents exhibited a good knowledge, attitude and practice which may be COVID 19 pandemic. COVID 19 pandemic has significantly improved the hand hygiene practices among people. This is due to the fact that HCWs are at the front line of COVID-19 outbreak, and their constant exposure to infected patients and contaminated surfaces can put them at risk for acquiring and transmitting the infection. One of the most frequently reported strategies that has been implemented in hospitals is frequent washing of hands and hand rub by HCWs.

The past experience suggests that the HCWs adherence to hand hygiene practices remains between 80% and 95%, when they are being directly monitored by infection preventionists during audit rounds. In instances when hand hygiene practices are observed covertly through secret shoppers, the average hand hygiene practices remained between 30% and 50%. This suggests that the observation bias, also known as the Hawthorne effect, plays a critical role in evaluating hand hygiene compliance.

During the COVID-19 crisis, we observed a sudden increase in the demand of hand sanitizers by HCWs. The data show that there has been great increase in the consumption of hand sanitizers. Given the seriousness of this outbreak, it was observed that the hand hygiene has occupied a new place of importance in the minds of HCWs. Not only the direct HCWs but the indirect HCWs also improved their compliance without any external reinforcement

CONCLUSION

The study concluded that the hcw's had a good knowledge attitude and practice of hand hygiene which needs to be maintained. The same can be improved by regular training sessions and sensitizing the staff about need of regular hand washing.

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