

# Awareness of Coronavirus among Healthcare Workers in Ghotki city of Pakistan: a Cross-Sectional Study

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## Abstract

### Objective

The fast spread and growing trends of coronavirus has turn out to be a main cause of fear for the healthcare workers. This study is aimed to report the awareness of Coronavirus and practices to control spread of infection amid Healthcare workers in the Ghotki city of Pakistan.

### Methods

The sample of 200 healthcare workers from the Ghotki city of Sindh Province in Pakistan completed a research based survey to report the awareness, responsiveness, knowledge, and practices to contain spread of infection during Coronavirus pandemic in healthcare systems. The survey questionnaire was designed as per CDC (Centers for Disease Control) and WHO (World Health Organization) current provisional guidelines published for healthcare workers (Center for disease control, CDC. 2020). Data was collected through appropriate sampling method and results were reported as frequencies and percentages. The statistics were performed on the bases of percentage of correct responses. The median test was used to separate pairwise evaluations for percentage of correct responses.

### Results

The general knowledge of coronavirus and awareness to prevention for all subcategories was un-adequate with 63% reporting un-correct answers. The maximum accurate replies were from private practicing doctors (Doctors running personal clinics with only out-patient services) and specialist 23%, lowest were from paramedical staff, non-clinical and administrative staff. A smaller amount of the total respondents could correctly define about contact precautions. Though, most of the healthcare workers were conscious of the accurate sequence for the use of a face mask. And, simply 23% of the individuals were found aware of the standards methods of hand wash as advised by who.

### Conclusion

Healthcare workers from the Ghotki city showed inadequate awareness of Coronavirus in current pandemic at hospitals in Ghotki city with an overall percentage of 37 % correct responses.

**Keywords:** coronavirus; COVID-19

## Introduction

Ghotki city, which is located in the northern Sindh, Pakistan is suffering from the coronavirus pandemic at high level. Healthcare staff on the forefronts are mostly susceptible to Covid-19 infection due to lack of awareness. Coronavirus, which is termed as SARS-CoV- 2 by the International Committee on Taxonomy of Viruses (ICTV) (Cascella, Rajnik, Cuomo, Dulebohn, Di Napoli, 2020). As per ICTV, This is a fresh strain of coronavirus which is discovered in 2019 and never found in humans

previously. Earlier, SARS-CoV and MERS- CoV (Middle East respiratory syndrome-coronavirus) have been found to infect humans.

Eruptions of respiratory disease due to these viruses appears to start in animals before transmission in human host. As we are aware that MERS-CoV was originated from Arabian camels then infected the humans, however SARS-CoV was originated from cats to human host. As per provisional reports, SARS-CoV-2 or COVID-19 likely to have transmitted from pangolin or bats. Chinese province Hubei reported first case of COVID-19 in Wuhan city, they first suggested coronavirus an animal-to-human spread

potentially from City’s wild animal marketplace. The Coronavirus then transmitted human to human while spreading outside of the Hubei province and subsequently to entire world. On March 11, 2020. WHO announced COVID-19 as a Pandemic (WHO, 2020). WHO announced droplet as potential route of transfer for the Coronavirus which proved to be highest risk for healthcare workers for being infected, healthcare workers are always in direct contact to patient or local public. Evaluating the awareness of Coronavirus disease and its spread among healthcare workers is the main objective of this study. We conducted a questionnaire-based survey as per the current interim guidelines for healthcare workers provided by the CDC, USA and WHO (Hand Hygiene, 2020)

**Methods**

**Study design and Setting**

We conducted this research at small city called Ghotki at Mirpur Mathello, it is located in the sukkur division, Northern area of Sindh Province in Pakistan. The questionnaire was designed in the shape of survey report and distributed to potential participants which included doctors, nurses and other healthcare workers in different part of city.

**Study population and eligibility**

We conducted this research survey from 1st April, to 30th May, 2020. Total of 200 individuals participated in the survey with a response rate of 100% as 200 invited Healthcare workers participated in the survey. The self-administered survey containing questions of socio-demographic and total of seventeen questions centered to awareness of Coronavirus and knowledge of prevention of infection among healthcare workers in Pakistani healthcare settings. The research questions setting were designed as per the current provisional guidance published by the CDC, last updated on March 7, 2020 (Center for Disease control, 2020). The survey also added with questions linked to hand hygiene guidelines provided by World Health Organization (WHO, 2020), this technique called five moments of hand hygiene were used to evaluate the participants awareness about importance of hand hygiene and

its effectiveness in coronavirus infection control (WHO, 2020) As per ethical practice, consents were taken from all the healthcare workers. Suitable sampling technique was used to collect data, and the distribution of results was presented as frequency and percentages. Sub-groups were classified on the basis of gender, age and profession (Doctors, Nurses, Non-Clinical staff and Paramedical staff which includes; Health technicians, Operation theatre technicians, dressing technicians, ECG technicians and pharmacy dispensers. Data were arranged in excel file, and descriptive Statistics were performed using SPSS.

**Results**

A total of 200 healthcare workers from the Ghotki city answered the survey. The majority of them were from the age group of 40 and above years 43% (n=86). About 16 % (n= 32) of the participants were females, remaining were male 84% (n=168). Doctors were 23 % (n =45), Nursing staff 30% (n = 61), Paramedical staff 21% (n=42) and Non-Clinical and administrative staff were about 26% (n=52) as per the completed the survey.

Only 22.6% of the participants were known that the virus causing coronavirus infection was earlier called as 2019-nCoV and later termed as SARS-CoV-2. The key mode of transmission of the coronavirus is respiratory droplets, this was answered correctly by 86% of the healthcare workers, non- clinical/administrative staff sub-answered with lowest percentage of correct answers.

About 23% (n = 45) participants were able to define close contact. The highest percentage of correct answers were from the consultants 99% (n = 23), and the lowest percentage was from the non-clinical/administrative staff sub- group 26 % (n=53). A mainstream of the participants were able to correctly answer questions related to Coronavirus exposure that needs hospital admission 23% (n=45)

No one from the participants had received hand wash training in the last two years and only 23% ( n= 45) were aware about WHO’s moments of hand hygiene. Interestingly (Figure 1).

Gender of Participants

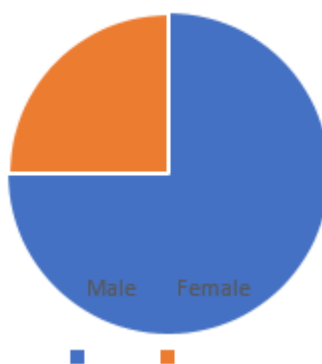


Figure 1: Participants by Gender.

Age Group	N	%
18-25	6	3
25-30	34	17
30-35	30	15
35-40	44	22

> 40	86	43
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**Table 1: Age Group.**

Professions	N	%
Doctors	45	23
Nurses	61	30
Paramedical staff	42	21

**Table 2: Types of professions.**

Category of Response	Correct answers N= 24	%
Up to date Awareness	23	
Aware about moderate information	12	
Basic to moderate information	9	
Aware about basic information	6	
NOT aware about the consequences	9	

**Table 3: Percentage of correct responses category wise**

General Condition	Number	%
Up to date Awareness	45	23
Aware about moderate information	29	14
Basic to moderate information	32	16
Aware about basic information	41	21
NOT aware about the consequences	53	26

**Table 4: Percentage of correct responses**

23% (n=45) of the participating healthcare workers were aware about the use of Personal protective equipment (PPE) which are recommended for Coronavirus patients care. 53% (n=56) had awareness about the transfer of patient within healthcare setting and essential use of PPE needed during the procedure. About 37% (n=74) of the participants had idea about isolation standards necessary to contain Coronavirus infection, whereas the lowest percentage was from paramedical and Non-clinical staff.

About 74 of the healthcare participants were known to infection control procedures like triage, respiratory care, coughing technique and ventilated waiting area for suspected Coronavirus patients. The percentage of correct answers was diverse in different professions in all participating individuals. A higher percentage of correct answers were from private practicing doctors 22 correct answers out of 24 were asked in the questionnaire.

## Discussion

Coronavirus is reason for thousands of deaths worldwide since its start from china, as per government of Pakistan around 1,243,385 people are confirmed Infected as of 29th Sep. 2021. As reported in Government of Pakistan's official Website and special mobile application. The most difficult job at this time is to identify and isolate those which are suspect or confirmed coronavirus cases to reduce the spread of infection. However, in this report, less than half of the participants were aware of defining a "contact

precaution." As per the CDC, a "contact precautions" are standard as: "contact with positive coronavirus person within approximately 6 feet for a lengthy period of time or direct contact with the case positive with coronavirus. Likewise, few other definitions have been given in provisional U.S. Guidelines for Risk Assessment and Public Health of Healthcare providers with possible exposure in hospitals or related service centers to individuals with COVID-19 or Coronavirus published under the CDC (Center for disease control, 2020). Low awareness was reported among paramedical staff with the lowest in the non-clinical staff. Being lowest group, the non-clinical / Administrative staff are at high risk to get infected from Coronavirus in the current healthcare setting and therefore a potential reason for contracting and spreading the infection. Standard hand hygiene habits show a vital role in avoiding the spread of coronavirus type of infection. The standard set by WHO for hand hygiene is Five Moments of hand hygiene, these five moments describes key instants when and why healthcare providers need to wash their hands. It tells exact time or moments and how to wash and do hand hygiene (Modi, Kumar, Solanki, Modi J., Chandramani, Gill., 2020). The basic methods for hand hygiene is divided into two types, one is hand-wash and other one is hand-rub. The hand-rub is based on alcohol or ABHR in most situations (Center for disease control, 2020) and soap is mostly used for hand-wash.

Though, the query in our research questionnaire was focused on the standard hand-hygiene method for noticeably dirty hands which is recommended as hand-washing for 20 seconds with soap and water, this method of hand-washing should last for around 40-60 seconds (WHO, 2020).

The general awareness of PPE use was moderate among all the staff. The CDC has provided earlier provisional guidelines for control of infection and coronavirus prevention for suspected or confirmed cases in Hospital for PPE (Center for disease control, 2020). A surgical Facemask or specialized facemask like of N95 is recommended to be used while attending the room. The specialized facemask or N95 is recommended during procedure or direct contact with suspect or confirmed case, proper discarding procedure of the used PPE should be performed and proper hand hygiene is highly recommended before and after the procedure. The aerosol-generating procedures are also very important during prevention and control of coronavirus, disposable gown and goggles, sterile gloves, cap and face-shield is recommended during these type of procedure. Only general awareness to PPE is not enough to control coronavirus, correct method and sequence is also significant to know. The order of put on a face-mask is like: keep elastic bands of face-mask at the mid of back of head then neck, fix the elastic band on nose Bridge, other part should be dragged below the chin, (Abdullah and Allen, 2020). All of the respondents were of the opinion that the use of a facemask/respirator is not essential or recommended for people who are well and having no contact with a Coronavirus patient or suspect. Generally, it is recommended that all healthcare workers should use Face-mask, it is recommended for those in healthcare settings and persons with Coronavirus symptoms should use facemask. Still there are discrepancies for use in in common population, common use of facemask can lead to shortage of supplies (Feng, Shen, Xia, Song, Fan, Cowling, 2020). All procedures on coronavirus infected and suspected patient should be performed under isolation room with prevention of airborne spread with negative pressure control system. It is highly recommended that infected or potential case of Coronavirus should not be placed under an exhaust air system which recirculates in entire building of Hospital. All air condition system within hospital building should be equipped with high- efficiency particulate air or HEPA filter. Very few research participants were aware about this concept and its importance in viral infection prevention.

### What is already known on this topic

Earlier many research papers has been published on same topic, like; It was concluded in a study at Kingdom of Saudi Arabia by Abdullah J. Al-Sahafi and Allen C. cheng that, the control of viral infectious diseases in the healthcare settings can be restricted by case detection and proper management by applying transmission-based precautions to all confirmed and potentially probable cases. For coronavirus in hospitals, this requires timely recognition, testing and airborne precautions (Abdullah and Allen 2020). In another study done by Abdullah Assiri and his team, they concluded this that human transmission of MERS-CoV can occur in Hospitals and possibly associated with considerable morbidity. Observation and proper infection-control measures are important to a global public health response. (Assiri, McGeer, Perl, Price, Al Rabeeah, Cummings, Alabdullatif, Assad, Almulhim, Makhdoom, et al., 2020).As per our information, to evaluate the awareness of Coronavirus among Pakistani healthcare workers in the middle of current coronavirus pandemic, the government of Sindh, Pakistan has recruited additional doctors and nurses on 89 days contract at urgent bases which can be extended as per pandemic situation. This strategy will help fill the potential shortage of healthcare workers, this also will help in management of specialized hospitals for Coronavirus patients. Current situation of Coronavirus infection in Ghotki city needs development of strategies at priority level to stop spread of Coronavirus infection within

Healthcare workers. Numerous drugs trial are underway including antivirals and at some extent Antimalarial.

### Limitations of this study

One of the possible disadvantages of this research report is that participants are from Ghotki city, which is located in south of Pakistan and anterior Sindh which do not truly represent the healthcare workers of the entire state and country.

### Conclusions

Healthcare workers from the Ghotki city showed inadequate awareness of Coronavirus in current pandemic at hospitals in Ghotki city with an overall percentage of 37 % correct responses. A major high percentage of correct answers were from doctors and the lowermost was from non-clinical/administrative staff. Our research study report shows that Ghotki city needs a strong strategy to implement continued professional educational programs and specialized training sessions on containing of infections like of Coronavirus. Doctors, Nurses and paramedical staff should be first priority for such trainings, as research report shows non-clinical and administrative staff also work with healthcare workers so they should also get training at some level to prevent spread of infection in hospitals. As a trained team of Clinical and non- clinical staff we can handle pandemics like of Coronavirus in future, a collective effort is necessary because alone doctors and healthcare workers cannot prevent these type of infections. Community education is also necessary, health education related to Coronavirus infection and its spread within community can reduce the chance of spread of infection.

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### Conflict of interest

No conflict of interest has been declared by the author(s).

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