

Pandemic Handling Competence of Healthcare System: A Qualitative Study

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ABSTRACT

Background: Covid-19 pandemic situation is showing its impact day by day, by drastic increase in the number of positive cases worldwide. The presence of the pathogen and fear of its spread changed the entire economy of the world upside down. India draws attention to the challenges affecting the health care system of the world's second most populous country. Although substantial achievement of population health in India. The health outcome remains inadequate when India is compared with other countries. Health care is far from equitable, accountable, or affordable, the health system in India needs to be reconfigured in its commitments are to provide optimum benefits to the people. **Objective:** To investigate the condition of healthcare system during covid-19 pandemic. **Method:** An exploratory design along with qualitative analysis using grounded theory approach was conducted on 35 samples with random sampling technique. **Results:** overall results indicate that, the health care system is providing good support in criteria like, private practices, insurance, infrastructure, labs and testing, availability of medicines. But, to improve its support and stand by in criteria like, doctor's economy, availability of nurses and house keepers, staff safety measures, availability of PPE kits, availability of doctors, conduction of surgical processes, availability of consumables, disposables and capital equipment like gloves, masks, syringe etc. **Conclusion:** This study upholds the benefits and drawbacks of health care system in different criteria of its own, regardless of private or government sectors.

Keywords: COVID-19, Doctors, Hospitals, Infrastructures, PPE, Disposables

Corona virus comes under the family Coronaviridae, order Nidovirales and genus Corona which means crown. The virus was isolated in late 1960s from the patient suffering from common cold which visualized under electron microscope and named it as B814¹. The subgroups of corona virus family are alpha, Beta, gamma and delta. According to WHO, novel corona virus belongs to the subgroups of beta coronavirus which is similar to Severe acute respiratory syndrome coronavirus (SARS CoV) in 2002² and Middle east respiratory syndrome corona virus (MERS CoV) in middle eastern countries³. Bats, palm civets, livestock and animals are the key reservoirs of this virus and rapidly

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Received: January 19, 2021; Revision Received: March 21, 2021; Accepted: March 31, 2021

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transmitting from human to human. Evidence suggested that novel coronavirus is more infectious disease than SARS-CoV and MERS-CoV. Coronavirus is a single standard (positive signs) RNA virus. The virus is spherical or polymorphic enveloped particle of size 80-120nm and which is associated with nucleoprotein within a capsid constitute of matrix protein ⁴.

In late December 2019, A novel coronavirus outbreak was reported in seafood market at Wuhan city, China. WHO, declared this outbreak as “Public health emergency of international” on 30 January 2020 (WHO,2020). Later as ‘pandemic’ on 11 March 2020. As of 30th August 2020, cases have crossed 25 million and death toll crosses 840, 000 were noticed across the world ⁵. Whereas, India suspected the first Covid -19 positive case on 30 January 2020. As of 30th august 2020, total number of confirmed positive cases in India reaches 3,612,503. death toll stands at 64,368 as of August 30 ⁶.

In day to day life, Corona virus infection has affected worldwide, including the business, education and even health care system ⁷. Health care system across the world is at the epicenter of this unprecedented global pandemic challenge and under high pressure to control the spread of novel coronavirus. Health care workers are the key persons to health care system and they are at the front line to control this ongoing corona virus pandemic ⁸. Subsequently, they are the one who are under high risk of getting infected at work place. In fact, corona virus has affected all the departments in the health care system. Lack of Personal protective equipment kits, working long hours, working under pressure, exposure to infected patients and pre-existing medical conditions are the COVID-19 risk factors among the health care workers ⁹. PPE kits, gloves, goggles, masks are very much essential to protect health care workers and other frontline workers from the spread of corona virus. But many hospitals and health care workers are facing significant challenges for the demand of PPE kits, ventilators, hospital beds and other vital equipment ¹⁰.

Initially, to manage and response for the COVID-19 pandemic, government has enlisted the district government hospitals across the country. With growing number COVID-19 cases in India, it is very much needed to assess the medical capacity of health care system in terms of wards, beds, ventilators, availability of doctors, staff members, etc. ¹¹. Private health care system raised to the occasion by offering all the support to the government including lab testing, providing isolation beds, ICU units and staff members to treat covid-19 patients ¹². According to National family health survey 3, private health care sector remains the primary source of health care for the households who are living in both rural and urban areas ¹³. In addition, India accounts 58% of the hospitals and 82% of the doctors are from private health care sector ¹⁴. Thus, it is very much essential to address the importance of health care system during the COVID-19 pandemic. Hence the present exploratory study design along with qualitative analysis explains the depth information regarding the responses of doctor’s about health care system during Covid-19 situation.

METHODOLOGY

Design

The current study used an exploratory study design along with qualitative analysis to obtain depth information regarding responses of doctor’s about health care system during Covid-19 situation. Grounded theory approach was used to formulate a theory from the data obtained rather than a presumed statement.

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Sample

The sample chosen for the study are 35 between the age ranges from 24-32 by using random sampling techniques.

Inclusion criteria: Doctors who were working during Covid-19 situation.

Exclusion criteria: Doctors from Veterinary specialization.

Tool

Based on some published literatures, self-designed closed ended questionnaire was circulated to gather responses from doctors across Karnataka. The questionnaire had questions to collect demographic details of individuals. Followed by 4 themes, under each theme 4 questions have been distributed according to the need of the study, which was aimed at gathering responses regarding health care system during Covid-19 from Doctors.

The following questions were included in the Questionnaire.

1. How effectively private practices are continuing to treat Non COVID patients during pandemic?
2. Availability of doctors for Non COVID-19 patients
3. Availability of doctors for COVID-19 patients
4. Duty hours of doctors after pandemic situation
5. How does Private healthcare systems are supporting to this global pandemic.
6. Availability of nurses and housekeepers during to covid-19
7. Availability of lab testing facilities during pandemic situation
8. How effectively staff safety protocols are established to minimize the risk during pandemic.
9. Availability of healthcare infrastructures like beds, ventilators for patients (both COVID and Non-COVID)
10. Availability for Elective procedures and Surgeries due to COVID-19 pandemic.
11. Does consumables, disposables and capital equipment including orthopedic implants, gloves, syringes, bandages, computed tomography, and magnetic resonance imaging devices are easily available during this pandemic?
12. Availability of medicines to patients which are prescribed by you
13. Availability of Personal Protective Equipment (PPE)
14. Regarding Tele consultation
15. Effect on doctors' and hospital economy due to pandemic situation
16. How effectively health insurance is working during pandemic

Data collection

The period of Data collection was one month, started and ended in July 2020, the days immediately after the second lockdown of India. Since Social Distancing, being one of the best ways of preventing COVID-19 pandemic. The present study data was collected through online survey using Google platform. Google form link was circulated through various social media platforms including whatsapp groups, facebook accounts and E-mail address of the doctors. The objective of the survey was informed, and the consent was taken from participants before the survey as a part of google form. It has been appraised to all the participants that their identity and results are confidentially used for research purpose only.

Coding

The responses from the participants were recorded regarding health care system during covid-19 pandemic. Responses were then categorised into different domains. Mainly, similar responses were grouped together like, Private health care system and economy during

COVID-19, Safety and infrastructures in hospital during COVID-19, Doctor's availability during COVID-19, Lab testing, and medicines availability during COVID-19, domains to build a theory that provides a link with the data.

RESULTS

Theme 1: Private health care system and economy during Covid-19.

1. How effectively private practices are continuing to treat Non COVID patients during pandemic?

From the present study. A high percentage of participants (51.4%) revealed that private practices are effectively continuing to treat Non COVID patients during pandemic COVID-19 pandemic. In addition, 40% of participants said somewhat effective and 8.6% of participants said not effectively than before the pandemic.

2. How does Private healthcare systems are supporting to this global pandemic.

Most of the participants (68.6%) had said that private healthcare systems are somewhat supportive to this global pandemic. Furthermost, 22.8% of the participants said supportive as before and 8.6% said not supportive to this COVID-19 pandemic.

3. Effect on doctors' and hospital economy during pandemic situation.

Majority of the participants (60%) had said that economic burden was not less than before on doctors and hospitals during COVID-19 pandemic. In addition, 28.6% of participants said that economic burden was more than before and 11.4% of participants said that normal as before.

4. How effectively health insurance is working during pandemic.

A high percentage of participants (51.4%) revealed that health insurance is effectively continuing during pandemic COVID-19 pandemic. In addition, 20% of participants said not effective and 28.6% of participants said equally effective as before the pandemic.

Theme 2: Safety and infrastructures in hospital during Covid-19

5. Availability of nurses and housekeepers during covid-19.

57.2% of the participants mentioned that availability of nurses and housekeepers during covid-19 were less than before, 31.4% of participants responded normal as before and remaining 11.4% of participants responded more than before.

6. How effectively staff safety protocols are established to minimize the risk during pandemic

According to our survey, majority of the participants (40%) reported that staff safety protocols are somewhat effectively established to minimize the risk during pandemic, moreover 34.2% of the participants responded has effectively involved and 25.8% of the participants responded that very effectively involved.

7. Availability of healthcare infrastructures like beds, ventilators for both COVID and Non-COVID patients.

When asked about the healthcare infrastructures like beds and ventilators for both COVID and Non-COVID patients, 45.7% of the participants reported as availability was normal as before, 31.4 of participants reported as less than before and 22.9 % of participants reported as more than before.

8. Availability of Personal Protective Equipment (PPE) for doctors.

A vast majority of the participants (42.8%) reported that PPE were not frequently available, 37.2% of the participants were reported frequently available and 20 % of participants were reported has not available for doctors.

Theme 3: Doctor's availability during Covid-19

9. Availability of doctors for Non COVID-19 patients.

62.85% of the participants mentioned that availability of doctors was less than before to treat for Non COVID-19 patients during COVID-19 pandemic, 37.15% of participants responded normal as before and no participants opted more than before.

10. Availability of doctors for COVID-19 patients

According to our survey, majority of the participants (45.75%) reported that numbers of doctors are yet to be required more to treat COVID-19 patients, moreover 31.4 % of the participants responded that a smaller number of doctors are available and 22.58% of the participants responded that limited numbers of doctors are available.

11. Duty hours of doctors after pandemic situation

42.8% of the participants mentioned that duty hours of doctors were more than pandemic situation, 31.45% of participants responded normal as before and 25.75% participants more than before.

12. Regarding Tele consultation

From the present study. A high percentage of participants (62.85%) revealed that tele consultations are not working effectively as direct consultation to treat patients during pandemic. In addition, 20% of participants reported totally not effective and 17.15% of participants reported equally working as direct consultation.

Theme 4: Labs, testing, and medicines availability during Covid-19

13. Availability of lab testing facilities during pandemic situation.

48.5% of the participants mentioned that availability of lab testing facilities during pandemic situation were normal as before, 34.3% of participants responded less than before and 17.1% of participants were reported as more than before.

14. Availability for Elective procedures and Surgeries due to COVID-19 pandemic.

A vast majority of the participants (71.4%) reported that elective procedures and surgeries were not frequently taking place as before during COVID-19 pandemic. Moreover 20% of the participants reported as frequently going on and 8.6% of the participants reported as not available.

13. Availability of consumables, disposables and capital equipment including orthopedic implants, gloves, syringes, bandages, computed tomography, and magnetic resonance imaging devices are easily available during this pandemic?

According to our survey, majority of the participants (51.4 %) were reported that Availability of consumables, disposables and capital equipment including orthopedic implants, gloves, syringes, bandages, computed tomography and magnetic resonance imaging devices are not frequently available as before, where as 20% of the participants were reported as frequently available and 8.6% of the participants were reported as not available.

14. Availability of medicines to patients which are prescribed

From the present study. A high percentage of participants (65.7%) were revealed that prescribed medicines to patients were normally available. In addition, 25.7% of participants reported that alternative medicines were available and 8.6% of participants reported as poorly available.

DISCUSSION

In response to covid-19 pandemic, private sector in the country has a major role in controlling the pandemic as it is dominant provider of health services. 58% of the hospitals are private health care system in the country which accounts doctors of 81%, outpatients visits of 82%, inpatient expenditure of 58% and birth institutions of 40% considering this

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large quantum of providing health service in the country ¹⁵, there were more expectations from the private health care system would facilitates to setup and take a major contributions towards controlling the Covid-19 pandemic. According to WHO, only after support from both private and public health care system helped to combat the large-scale West African Ebola crisis in 2014-2016 ¹⁶. However, from the present study most of the participants had said that private healthcare systems are somewhat supportive to this global pandemic. As the numbers of cases are increasing, day by day, many public hospitals in the country have been turned completely to Covid-19 hospitals. Often due to economic problems many non COVID patients in the country are dependent on the government hospitals for their lifesaving and essential treatments including dialysis, chemotherapy, immunotherapy, radiations, and many others. Such patients are being forced to take treatment from the private hospitals. However high percentage of participants revealed that private practices are effectively continuing to treat Non COVID patients during COVID-19 pandemic. A survey by NSSO (National Sample Survey Organization) reveals that 40% of the patients admitted to health care centers have either had to sell assets or borrow money from others to cover their medical expenses. Thus, more than a disease, patients must worry about economic problems; hence health insurance is the best answer to get rid of health worries ¹⁷. Having an insurance policy is beneficial and must during the outbreak of pandemics. As per the guidelines from IRDAI two standard policy are launched during COVID -19 pandemic they are, Corona Kavach Policy and Corona Rakshak policy. These COVID-19 health insurance policy covers the medical expenses incurred on the treatment of COVID-19 including in-patient hospitalization, medicines, diagnostic test fee, ICU charges and amongst others. The Coronavirus Aid, Relief, and Economic Security or cares, Act provides multiple means of direct and indirect aid to health care providers and small businesses ¹⁸. Present study revealed that health insurance policies are effectively continuing during COVID-19 pandemic.

COVID warriors: including doctors, nurses, housekeeping staff and nontechnical staff in the hospitals were at the spearhead in controlling the coronavirus pandemic. Unlike ventilators or wards, Health care workers cannot serve at 100% tenure for longer period and manufactured urgently. In response to global crisis, the staff safety protection and intervention approaches for the health workers must be ensured ¹⁹. If health care workers are at risk it means we are at risk said by Tedros Adhanom Ghebreyesus, Director general of WHO. However, health care workers are being largely exposed to the infection most while diagnosing and treating the patients. To keep our health warriors safe and prevent from the infection, safety kits and PPE kits for health warriors is a key concern. The kits will consist of masks, sanitizers, medical aprons, medical gloves, disposable goggles, face-shield, hand towels etc. Every PPE kit are designed to be used only for single time by one person, health workers needs at least 2-3 kits in a day ²⁰. A study conducted by, Department of Health and family welfare, reported that among 14% of health care workers in Kerala, suspected covid-19 positive due to shortage and reuse of PPE kits ²¹. Most of the public and private hospitals in large intensity state are lacking out of supply as the pandemic accelerates. A suspected Covid-19 patient requires isolation beds, if cases found to be critical, there will be a need of ICU. With growing number COVID-19 cases in India, it is important to assess the medical capacity of health care system in terms of wards, beds, ventilators etc. According to National Health Profile-2019, availability of beds in the government hospital is abysmally low in India (0.55 beds per 1000 population), and such corona virus pandemic can even quickly complicate the problem earliest ^{6,7}. In addition to this nearly 5-10% of the total suspected cases patients requires critical care in terms of ventilator support.

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During this pandemic, elective surgeries in the hospitals have reduced gradually. Delaying or cancellation of time-sensitive elective surgeries such as cancer and transplant of organs leads to variation in health, quality of life and even leads to death ²². It is estimated that 2 367 050 operations across the worldwide would be cancelled per week during the peak of the pandemic, were 90.2 % of the cancelled or postponed operations were of benign disease, 8.2% of cancer and 1.6% of obstetrics ²³. From the present study, most of the participants reported that elective procedures and surgeries were not frequently taking place as before during COVID-19 pandemic.

The essential resources including man powers (Doctors), protective gears, and medicine are very much important to combat against the spread of corona virus. Doctors are always been at the forefront of patient care. Whenever a calamity hits, their presence is very much essential and boosted to a demi-god status. Earlier survey reported that availability of doctors across the nation had come down due to restricted travelling, strict lockdown, and lack of staff peoples. In addition to that, doctors are one amongst the people who are most at risk of getting the disease and even their families are also getting infected more ²⁴, because of this reason many doctors are given up by going homes and staying in solitary accommodations. Even completion of duty hours of the doctors is extending up to 15 or more than that ²⁵. Majority of the participants replayed that duty hours are increased and availability of the doctors to treat both COVID and Non COVID patients were less than before pandemic.

Telemedicine is a defensible solution for precaution, prevention and treatment to break the spread of corona virus. In response to covid-19 crisis, Telemedicine has increased and bridging the gap between health systems to patients, According to POTUS, telemedicine is an approved type of communication between physicians and patients ²⁶. Tele medicine is effectively working with a positive contribution towards health care system. This type of virtual communication is allowing to continuing their treatment and responsibilities towards patients ²⁷. Although telemedicine has many advantages, but telemedicine does have certain limitations, including missed findings of laboratory test, access of patient to technology and HIPAA regulations ²⁸. Present study revealed that tele consultations are not working effectively as direct consultation to treat patients during pandemic.

CONCLUSION

The current study has resided to understand the support provided by healthcare system in India during this pandemic covid-19, through doctors' responses. This study upholds the benefits and drawbacks of health care system in different criteria of its own. Regardless of private or government sectors, the loopholes must be over covered to provide better health condition to both Covid and non-Covid population. Further studies on the same line can provide us the later condition of healthcare system after certain duration with detailed outcomes.

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Acknowledgement

The author appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author declared no conflict of interest.

How to cite this article: Abhishek P R Nadiga, Nityashree K L & K L Krishna (2021). Pandemic Handling Competence of Healthcare System: A Qualitative Study. *International Journal of Indian Psychology*, 9(1), 1427-1435. DIP:18.01.149/20210901, DOI:10.25215/0901.149