

# Perception of healthcare workers towards ethical aspects of responsiveness of COVID 19 outbreak: A cross-sectional study

Sukhbir Singh<sup>1</sup>, Manjunath B. Govindagoudar<sup>2</sup>, Dhruva Chaudhry<sup>2</sup>, Pawan K. Singh<sup>2</sup>, Madan G. Vashist<sup>3</sup>, Hem Chandra<sup>4</sup>

Departments of <sup>1</sup>Hospital Administration, <sup>2</sup>Pulmonary and Critical Care Medicine, <sup>3</sup> General Surgery, Pt. B. D. Sharma PGIMS, Rohtak, Haryana and Ex Medical Superintendent, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, <sup>4</sup>Vice-Chancellor, HN Bahuguna Uttarakhand Medical Education University 4<sup>th</sup> Floor, Administrative Block, Government Doon Medical College Campus, Dehradun, Dehradun, Uttarakhand, India

## ABSTRACT

**Introduction:** COVID-19 has spread all over the world and most of the countries are still grappled with the *Pandemic*. Health-care-workers (HCWs) being the frontlines during such pandemics have different beliefs and faiths with regards to ethical aspects of preparations. **Methodology:** In order to study the perception of HCW about ethical aspects of COVID-19, a cross-sectional study was done in a tertiary-care-teaching hospital. A pretested questionnaire was circulated among the participants on a digital platform. **Results:** The HCWs were divided over many statements, like if COVID-19 was more hype than reality (45.77% disagreed and 43.25% agreed). 57.44% of participants either agreed or strongly agreed that the treatment of non-COVID-19 cases suffered due to arrangements made for COVID-19 cases. When the responses received against individual statements were compared with various other socio-demographic variables as a denominator, various interesting results were revealed. There was a significant difference of opinion among the participating HCWs ( $P < 0.05$ ). **Conclusion:** Differences of the opinions had their relationships to demographic characteristics of the subjects as well as related to perceived knowledge of COVID-19.

**Keywords:** COVID-19, ethics, health care workers, pandemic, World Health Organization

## Introduction

Novel-coronavirus or COVID-19 first reported from Wuhan territory of China and later declared as pandemic by the World Health Organization. The public health interventions aimed at reducing the spread of this infectious disease like isolation and quarantine, leads to the disruption of usual activities and

essential services.<sup>[1]</sup> The hospital planning and preparedness for dealing with infectious disease pandemic involve many critical ethical issues about how, where and to whom the limited and scarce resources like a priority in treatment, medications, N95 respirators, vaccination, intensive care beds etc., should be allocated. The urgency of logistics and scientific needs should not sideline consideration of ethical issues in pandemic planning.<sup>[2,3]</sup> One ethical principle<sup>[4]</sup> for allocating the scarce medical resources is to maximize benefits, which is additionally categorized into two ethical subprinciples, i.e., 'Save the most lives' and 'Save the most years'. The COVID-19 pandemic found most countries unprepared, with little resources, and dismantled everyday life in

**Address for correspondence:** Dr. Pawan K. Singh, Department of Pulmonary and Critical Care Medicine, Pt. B. D. Sharma Post-Graduate Institute of Medical Sciences Rohtak, Haryana - 124 001, India.  
E-mail: ga.ps.complete@gmail.com

Received: 09-01-2021

Revised: 27-06-2021

Accepted: 04-07-2021

Published: 31-01-2022

### Access this article online

#### Quick Response Code:



Website:  
www.jfmpc.com

DOI:  
10.4103/jfmpc.jfmpc\_72\_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Singh S, Govindagoudar MB, Chaudhry D, Singh PK, Vashist MG, Chandra H. Perception of healthcare workers towards ethical aspects of responsiveness of COVID 19 outbreak: A cross-sectional study. J Family Med Prim Care 2022;11:60-6.

all its dimensions i.e., health, behavior and economy.<sup>[5]</sup> Doctors are now confronted with new ethical difficulties, which may force them to make tough and painful decisions for their patients and themselves due to a scarcity of resources.<sup>[6]</sup> If the ethical issues are not considered during hospital planning to attend to such pandemic, then it may lead to loss of public trust, low morale of HCW, and stigmatization of vulnerable community's etc.<sup>[7]</sup>

On review of literature, very little original work is available, therefore, this study was planned to assess the perception of HCW who were directly involved in the treatment of COVID-19 patients about the issues related to ethics, equity and justice-involved in planning and responsiveness to the novel-coronavirus pandemic.

## Materials and Methods

It was a cross-sectional survey. The study population consisted of faculty, residents, demonstrators and nursing staff of various specialties who were directly involved in the care of suspected/confirmed COVID-19 patients at Post Graduate Institute of Medical Sciences, Rohtak, Haryana, India during the period of April-August 2020. All the aforementioned HCW were included in the baseline sampling frame (n = 505). Primary aim of this study was to assess the perception among HCW about issues related to ethics, equity and justice-involved in planning and responsiveness to COVID-19. The association between the perception/responses and selected socio-demographic variables among the participants was also planned. For study tool, a questionnaire was prepared after extensive literature review available in the literature. This questionnaire was pretested by pilot testing among 20 subject experts. The inputs received during pretesting were reviewed, and the questionnaire was modified accordingly. The pretested questionnaire was used for this study. Questions in this tool included those on socio-demographic variables of participants and about the perception of HCW about various issues related to ethics, equity and justice-involved in planning and responsiveness to COVID-19 outbreak. The questionnaire had 20 different statements on a 5-point Likert scale. The questionnaire was circulated among the participants on a digital platform (SurveyMonkey®). The link was shared with each participant, and the informed consent was taken on a digital platform. The link was available for a defined period, and after that the link was disabled, and the survey was closed. The participants who failed to submit their reply were dropped from the study. All the doctors (i.e. faculty, residents, demonstrators, and medical officers) and nursing staff (i.e. Nursing Sister and staff nurse) directly involved in management of COVID-19 cases

were included in the study. The members of the Scientific and Ethics-committee and experts involved in the pretesting of questionnaire were excluded. The participants who failed to submit their response in a defined timeline were also excluded.

## Data analysis

The data were collected through a digital platform (i.e. SurveyMonkey®), transferred to Microsoft® Excel, and descriptive statistics were conducted on SPSS® software version 21. The master data sheet was prepared and analyzed by applying statistical tests for arriving on a result. Category-wise subgroup analysis was made to generate the hypothesis regarding the perception of HCW. Variables used for cross-tabulations and analysis were individual responses and socio-demographic data. A value of  $P < 0.05$  was considered as significant.

Ethical clearance for this study was obtained from the Biomedical Research Ethic Committee (institutional ethical committee).

## Results

A total of 437 respondents were included in the analysis out of total 505 health care workers and majority of them were resident doctors [Table 1].

It was observed that 68% participants were in the age group of 25-34 years, 63% were married, 69% were females, 48% were graduates, 55% were doctors, 90% were from Rohtak city (where the hospital is located), and 41% had experience up to 10 years [Table 2].

The frequency distribution of responses to ethical statements was analyzed and it was revealed that few of the questions provided responses that were unexpected and divergent. Like the HCW were divided over the question, if COVID-19 was more hype than reality (45.77% disagreed and 43.25% agreed). 57.44% of participants either agreed or strongly agreed that the treatment of non-COVID-19 cases suffered due to arrangements made for COVID-19 cases. Similarly, the cohort was divided over the pooling of HCW from various other parts of the hospital. 43.02% disagreed whereas 42.33% agreed to the statement about the policy of pooling of HCW. 74.51% either agreed or strongly agreed to their capabilities of handling of own safety like wearing PPE kits and N95 respirators. 85.82% HCW agreed to the statement that it was ethically justified to keep a mildly symptomatic patient in hospital for isolation of 14 days if he had COVID-19. Most of the participants felt that distributive justice and damage control were crucial goals of public health

**Table 1: Detail of sample size (n=505)**

Name of the Participants	Total no. of sample size (n)	Total no. of actual participation in study
Medical Faculty	49	29 (59.2%)
Resident Doctors (i.e. Senior Resident, Jr. Resident and Demonstrators)	230	221 (96.1%)
Nursing Staff (Nursing Sister and Staff Nurse)	226	187 (82.7%)
Total	505	437 (87%)

**Table 2: Distribution of sample size as per place of residence, age group, sex, educational qualification, marital status, designation, posting area and years of experiences**

Parameter	Frequency (%)
Age groups in years	
18-24	27 (6.18%)
25-34	297 (67.96%)
35-44	67 (15.33%)
45-54	30 (6.86%)
55-64	16 (3.66%)
Sex Group	
Male	134 (30.73%)
Female	302 (69.27%)
Marital Status	
Married	271 (63.16%)
Unmarried	161 (36.84%)
Designation	
Doctor	245 (56.06)
Nursing Staff	187 (42.79)
Other	5 (1.14)
Posting Area	
Ward	241 (55.40%)
ICU	87 (20.00%)
OPD	30 (6.90%)
Other (administration/office)	77 (17.70%)
Experience (in years)	
>5 years	138 (31.72%)
5-10 years	180 (41.38%)
10-20 years	73 (16.78%)
<20 years	44 (10.11%)
Education Qualification	
Graduate	209 (47.94%)
Post-Graduate	191 (43.81%)
PhD/Post Doctoral/Super-specialization	10 (2.29%)
Other	26 (5.96%)

emergency preparedness. Similarly, most of the HCW agreed to the statement that minimizing damage is the priority for public health emergency preparedness as compared to the maintenance of liberty and rights of the patients. It was considered ethical, by most of the respondents, to share individual information about patients with public health authorities during an infectious emergency. Majority of respondent's believed that Government can play a vital role in the prevention of such public health emergencies. More than 90% of the participant's believed that all countries should review their public heal laws so as to ensure a rapid and effective response to public health emergencies like COVID-19 and timely notification should be provided to other countries regardless of the negative consequences on trade or tourism [Table 3].

In the next step of analysis the individual responses of HCW were compared using the socio-demographic denominators. We used designation, age groups, gender, marital status, educational qualification, posting areas, experience and residential areas as grouping variable. For a meaningful comparison, responses of "agreed" and "strongly agreed" were clubbed together to form a new variable as *agreed*. Similarly "disagreed" and "strongly

disagreed" were also clubbed together as *disagreed*. This was done to avoid false-positive results of statistical significances. Firstly, in subcategory analysis, the cohort was divided into doctors and nurses, and their response to individual statements was compared, and it was found that in many responses the cohort was significantly divided like in response related to statement regarding novel-coronavirus epidemic is more hype than reality, blocking of one full ward for corona patients in hospital, treatment of other patients suffered due to COVID preparedness, utilization of doctors, nurses pooled for COVID, HCW preparation to handle their own safety etc., The difference in opinion among the doctors and nurses on these issues was statistically significant (i.e.  $P < 0.05$ ). The detail of each individual statement, along with the value of significance, is given in Table 4.

When the responses received against individual statements were compared with various other socio-demographic variables like gender, marital status, age group, educational qualification etc., as a denominator, various interesting results were revealed. There was a significant difference of opinion among the participating HCWs ( $P < 0.05$ ). The maximum numbers of divergent opinions were found in subgroup analysis with gender followed by marital status, educational qualification, age group and experience. The statements to which the divergent opinion was received varied in different subgroups but the most common one were "weather blocking of one whole ward for COVID-19 cases led to wastage of resources or not and whether pooled HCW from other departments could have been utilized elsewhere". The detailed result, along with  $P$  value, is shown in Table 5.

## Discussion

In this study, conducted with an aim to analyze the perspectives of HCW towards ethical aspects involved in COVID-19 preparations, various findings were of significance. Any pandemic or a public health emergency creates a significant strain on the healthcare system. Among various challenges faced by the administration and healthcare leadership, the most important ones are resource allocation, preserving rights to identifiable data of the patients and ensuring the safety of HCW during the crisis. HCW are the prime frontline workers while managing the cases of COVID-19. With an exponential rise in the number of cases, HCW are bound to face the dilemma of choosing *whom to provide critical support and whom to ignore*. The rise in number of cases in India and its already strained resources are bound to be tested in coming days. Resource allocation and triaging experiences were first derived from Italy where the death toll was exceptionally high, and requirement of ICU beds and ventilators was more than the availability. This was followed by the guidelines that *who should be saved*.<sup>[8]</sup> The ethical aspects of resource allocation have two main components- first, a fragile subject will require more resources and will have fewer chances of survival and second, fragile patients even if saved will not be able to contribute to the crisis management when recovered.<sup>[9-11]</sup> HCW who will need to make such decisions can have huge mental stress. In our study, we found that most of the HCW believed in the concept of

**Table 3: Frequency distribution of responses with regards to each statement among the health care workers**

Statement	Strongly disagree (%)	Disagree (%)	Neither Agree nor disagree (%)	Agree (%)	Strongly Agree (%)
The novel corona virus epidemic is more hype than reality?	63 (14.42%)	137 (31.35%)	48 (10.98%)	136 (31.12%)	53 (12.13%)
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	91 (20.82%)	172 (39.36%)	41 (9.38%)	103 (23.57%)	30 (6.86%)
The treatment of patients admitted with other illnesses suffered due to coronavirus epidemic preparedness in our hospital.	40 (9.15%)	84 (19.22%)	62 (14.19%)	205 (46.91%)	46 (10.53%)
The doctors, nursing and other staff pooled from various departments for making arrangements to tackle coronavirus emergency could have been better utilized elsewhere.	43 (9.84%)	145 (33.18%)	64 (14.65%)	145 (33.18%)	40 (9.15%)
You are very well prepared to handle your own safety like wearing PPE kit or N95 mask before the beginning of your posting in coronavirus ward.	12 (2.75%)	56 (12.81%)	39 (8.92%)	222 (50.80%)	108 (24.71%)
Keeping a URI symptomatic patient of coronavirus for 14 days in isolation is ethically justified.	7 (1.60%)	26 (5.95%)	29 (6.64%)	261 (59.73%)	114 (26.09%)
Our hospital was economically equipped to handle Public Health Emergency situation like novel corona virus.	33 (7.55%)	80 (18.31%)	62 (14.19%)	215 (49.20%)	47 (10.76%)
The Damage (death and morbidity) reduction is an essential goal of Public Health Emergency Preparedness.	4 (0.92%)	14 (3.20%)	24 (5.49%)	291 (66.59%)	104 (23.80%)
The concept of Distributive Justice (justice for all) is a crucial goal in Public Health Emergency Preparedness and response.	4 (0.92%)	16 (3.66%)	44 (10.07%)	291 (66.59%)	82 (18.76%)
Public Accountability and transparency (like informing about a suspected patient) play a vital role in Public Health Emergency Preparedness and response.	2 (0.46%)	6 (1.37%)	29 (6.64%)	247 (56.52%)	153 (35.01%)
Public Health activities should be more focused on minimizing the extent of suffering as compared to the maintenance of human liberty/rights of the patient during an emergency.	3 (0.69%)	24 (5.49%)	45 (10.30%)	279 (63.84%)	86 (19.68%)
The allocation of resources is perhaps the most tricky and anxiety-provoking issue in Health Emergency Preparedness.	5 (1.14%)	21 (4.81%)	46 (10.53%)	300 (68.65%)	65 (14.87%)
The Government can play a critical role in preventing infectious disease outbreaks like corona-virus by improving social and environmental conditions and ensuring a good healthcare system.	6 (1.37%)	6 (1.37%)	16 (3.66%)	264 (60.41%)	145 (33.18%)
The issues related to equality like, who should be given priority in the distribution of scarce vaccines, medications, and ventilators etc., during an infectious disease outbreak should be addressed in Public Health Emergency Preparedness and response.	5 (1.14%)	9 (2.06%)	40 (9.15%)	289 (66.13%)	94 (21.51%)
All countries should review their public health laws to ensure that they give the Government sufficient authority to respond effectively to an epidemic.	0 (0.0%)	3 (0.69%)	21 (4.81%)	297 (67.96%)	116 (26.54%)
All countries should provide timely notification of events that may become a public health emergency of international concern, regardless of any negative consequences such as a possible reduction in trade or tourism.	4 (0.92%)	13 (2.97%)	16 (3.66%)	253 (57.89%)	151 (34.55%)
Even in outbreaks, healthcare authorities should ensure that all individuals are treated fairly and equitably regardless of their social status or perceived "worth" to society.	4 (0.92%)	6 (1.37%)	19 (4.35%)	252 (57.67%)	156 (35.70%)
Liberty-infringing methods (to control diseases) such as quarantine and isolation, can be justified if the risk of harm to others can be significantly reduced.	1 (0.23%)	7 (1.60%)	19 (4.35%)	283 (64.76%)	127 (29.06%)
Is it ethical for doctors to provide identifiable personal information, including names, addresses and other socio-demographic characteristics, to health authorities to monitor infectious Public Health Emergencies?	6 (1.37%)	26 (5.95%)	42 (9.61%)	263 (60.18%)	100 (22.88%)
Should individuals who are being monitored under public health surveillance always be asked for their informed consent?	11 (2.52%)	73 (16.70%)	47 (10.76%)	233 (53.32%)	73 (16.70%)

distributive justice and agreed to the statement that resource allocation is one of the most anxiety-provoking issues in public health. In addition to this, HCW were of the belief that *possible worth to society* and hence frailty should not be considered while allocating resources. These finding though ethical, but are in

contrast to the experiences of Italy. This might be due to the preliminary stages in which COVID-19 is in our country.

Another important aspect was for HCW to provide identifiable information for the health authorities for contact tracing. In our

**Table 4: Cross Tabulations of Designation (doctor versus nurses) against responses of selected statements from questionnaire which were showing statistical significance for comparison of means**

Statement	Designation	Response on Likert Scale			P
		Dis-agree	Neither agree nor disagree	Agree	
The novel corona virus epidemic is more hype than reality?	Doctors	63	14	110	P<0.001
	Nurses	137	34	79	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Doctors	193	20	37	P<0.001
	Nurses	70	21	96	
The treatment of patients admitted with other illnesses suffered due to coronavirus epidemic preparedness in our hospital.	Doctors	82	49	119	P<0.001
	Nurses	42	13	132	
The doctors, nursing and other staff pooled from various departments for making arrangements to tackle coronavirus emergency could have been better utilized elsewhere.	Doctors	146	47	57	P<0.001
	Nurses	42	17	128	
You are very well prepared to handle your own safety like wearing PPE kit or N95 mask before the beginning of your posting in coronavirus ward	Doctors	51	32	167	P<0.001
	Nurses	17	7	163	
Our hospital was economically equipped to handle Public Health Emergency situation like novel corona virus.	Doctors	90	48	112	P<0.001
	Nurses	23	14	150	
Public Health activities should be more focused on minimizing the extent of suffering as compared to the maintenance of human liberty/rights of the patient during an emergency.	Doctors	17	35	198	P=0.009
	Nurses	10	10	167	
Should individuals who are being monitored under public health surveillance always be asked for their informed consent?	Doctors	71	36	143	P<0.001
	Nurses	13	11	163	

**Table 5: Cross tabulations of socio demographic variables against responses of selected statements from questionnaire which were showing statistical significance for comparison of means**

Statement	Socio-demographic variable	Sub groups	Disagree	Neither agree nor disagree	Agree	P
The novel corona virus epidemic is more hype than reality?	Gender	Females	125	34	143	P=0.017
		Males	75	13	46	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Gender	Females	165	31	106	P=0.001
		Males	98	10	26	
The doctors, nursing and other staff pooled from various departments for making arrangements to tackle coronavirus emergency could have been better utilized elsewhere.	Gender	Females	113	46	143	P=0.001
		Males	75	18	41	
Our hospital was economically equipped to handle Public Health Emergency situation like novel corona virus.	Gender	Females	62	42	198	P<0.001
		Males	51	20	63	
Should individuals who are being monitored under public health surveillance always be asked for their informed consent?	Gender	Females	47	27	228	P=0.001
		Males	37	20	77	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Marital Status	Married	142	26	108	P<0.001
		Unmarried	121	15	25	
The treatment of patients admitted with other illnesses suffered due to coronavirus epidemic preparedness in our hospital.	Marital Status	Married	70	30	176	P=0.001
		Unmarried	54	32	75	
The doctors, nursing and other staff pooled from various departments for making arrangements to tackle coronavirus emergency could have been better utilized elsewhere.	Marital Status	Married	103	30	143	P<0.001
		Unmarried	85	34	42	
Should individuals who are being monitored under public health surveillance always be asked for their informed consent?	Marital Status	Married	54	22	209	P=0.002
		Unmarried	39	25	97	
The doctors, nursing and other staff pooled from various departments for making arrangements to tackle coronavirus emergency could have been better utilized elsewhere.	Educational Qualification*	Graduate	74	28	107	P=0.001
		Post-Graduate	98	31	62	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Educational Qualification*	Graduate	113	18	78	P=0.009
		Post-Graduate	131	18	42	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Age groups	<35 years	210	32	82	P<0.001
		>35 years	53	9	51	
Our hospital was economically equipped to handle Public Health Emergency situation like novel corona virus.	Age groups	<35 years	90	54	180	P=0.004
		>35 years	23	8	82	
The blocking of one whole ward for anticipated coronavirus epidemic at our hospital lead to wastage of resources.	Experience groups	<10 years	205	28	85	P=0.006
		>10 years	56	13	48	

country, various methods of contact tracing are being used like mobile tracking. It is further associated with the stigmatization of individuals who are kept in hospital as COVID-19 suspects. The question of whether sharing personal information was considered ethical and the use of mobile phone applications for contact tracing has been evaluated in various articles.<sup>[12,13]</sup> HCW in this study were of the opinion that information sharing is justified, but at the same time, informed consent should be obtained.

While preparing for the pandemic, HCW of all ranks were pooled from other departments and specialties for providing services in COVID-19 areas. All the HCW who were at higher risk were given the duties of administration, whereas others were posted in wards/ICUs. This issue of reallocation has been evaluated in detail by Kandel N *et al.*<sup>[14]</sup> The idea of reallocation can cause two most important strains among healthcare workers- lack of expertise and requirement in non-COVID-19 areas where services are still running. This difference of opinion was clearly visible in the results of this survey. Most of the nurse's believed that staff pooled from other departments could have been better utilized elsewhere, whereas most of the doctors believed otherwise. The reasons behind these divergent opinions could have been the training and awareness of the policies on which the hospital was working on. It is important for the policymakers to address such points of view before shifting the duties areas.

One interesting analysis was about the reality of COVID-19 pandemic. 43.25% believed that COVID outbreak was more hype than reality, while 45.77% believed otherwise. A significantly higher number of nurses as compared to doctors believed that COVID-19 was more hype than reality ( $p < 0.001$ ). This could have been due to the wider circulations of COVID-19 reports from Italy and China (countries with highest COVID-19 case burden during the time of survey), more so among doctors than nurses. In the previous study, it was found that for doctors, the source of information was more commonly social media and the internet. Information spread through social media is rapid, and whereas Government-issued circulars are often provided information with a time lag. This was reflected in the divergent responses of the doctors and nurses regarding COVID-19 being hype or reality.

One of the important questions in our survey was whether HCW considered them well prepared for self-safety, including being trained in donning PPE (personal protective equipment) kits & N95 respirators. HCW sustain a significant risk of exposure while performing duties in COVID-19 areas. Ensuring their safety is one of the prime objectives of hospital leadership. It was seen that a considerable number of nurses agreed and the majority of doctors disagreed that they were very well prepared to ensure their own safety like wearing PPE kit or N95 mask ( $p = 0.001$ ). This was surprising as most of the previous studies have shown that doctors scored higher in previous studies as compared to nurses.<sup>[15]</sup>

Most of the HCW *strongly agreed* to the statement that all countries should provide timely notification of events that may become a public health emergency of international concern, regardless of any negative consequences such as a possible reduction in trade or tourism. There has been growing concern by the response of countries and reporting of cases with the reason that reporting a high number of cases might adversely impact their trade and tourism. But this practice is not only unethical but can hamper the global efforts to curb down the infection spread. A similar observation was also reported in few other studies<sup>[16-19]</sup> where it was stated that capacity building and collaboration between countries in addition to responsible reporting are needed to strengthen the system for the control of any Public Health Emergency of International Concern.

Most of the previous publications, in the era of COVID-19, have lacked the base of evidence.<sup>[17-19]</sup> HCW and their perception of ethics have not been evaluated previously. This study revealed various important findings which need to be addressed by the policymakers. COVID-19 outbreak poses great administrative challenges and steps taken in the direction of its management and containment might be in contradiction to the code of ethics. The Primary care Physicians are also involved in screening and management of this highly infectious disease and hence their understanding of various issues related to ethics, equity and justice associated with management of COVID-19 is equally important.

### Strength of this study

The major strength of our study was that it studied the perception of HCWs working in a large public sector hospital about important issues of ethics, equity and justice associated with management of COVID-19 pandemic. To our knowledge this is novel original research work on this topic. Among other merits of the study were the huge sample size, exhaustive and directed questions and an analysis which comprehensively evaluated various aspects of the responses.

### Limitation of this study

There were some flaws to this study. Firstly, it is only a single centered study. But at the same time, all HCW belonging to one single center gave us uniformity. As different ranks of HCW are working under similar administration and uniform policy, their responses carry much higher value. Secondly, the study analysis did not analyze inter-response associations. It would have been interesting to know how one response influenced the other, but the practical implications of the same are dismal.

### Key highlights of the study

1. It was observed that ethical aspects are commonly ignored during preparations and response towards COVID-19 pandemic. Various health care workers had significantly divergent opinions towards ethics COVID-19 responsiveness. Fear, faith, knowledge and social media influence are likely to guide such extreme opinions.

2. This study highlights the lack of coherence among healthcare workers about the basic ethical aspects of the current pandemic.
3. In addition, this study also provides an insight to policy makers that timely addressal of ethical principles can have multifold implications in efficiency of health care workers.

## Conclusion

It was observed that there were several aspects of ethical perceptions among HCW revealed towards COVID-19, which had divergent responses. Differences of the opinions had their relationships to demographic characteristics of the subjects as well as related to perceived knowledge of COVID-19. Policymakers must keep these aspects in mind while making regulations as going against the same might weaken the morale of frontlines workers in the battle against COVID-19.

## Ethical clearance

Obtained from the study Institute's Ethical Committee.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Kinlaw K, Barrett DH, Levine RJ. Ethical guidelines in pandemic influenza: Recommendations of the Ethics Subcommittee of the Advisory Committee of the Director, Centers for Disease Control and Prevention. *Disaster Med Public Health Prep* 2009;3(Suppl 2):S185-92.
2. Tracy CS, Upshur RE, Daar AS. Avian influenza and pandemics. *N Engl J Med* 2005;352:1928.
3. Zoloth L, Zoloth S. Don't be chicken: Bioethics and avian flu. *Am J Bioeth* 2006;6:5-8.
4. Thompson AK, Faith K, Gibson JL, Upshur RE. Pandemic influenza preparedness: An ethical framework to guide decision-making. *BMC Med Ethics* 2006;7:E12. doi: 10.1186/1472-6939-7-12.
5. Mahurkar A. Ethics in the Covid-19 emergency: Examining rationing decisions. *Indian J Med Ethics* 2020;V: 168-9.
6. Vergano M, Bertolini G, Giannini A, Gristina GR, Livigni S, Mistraretti G, *et al.* Clinical ethics recommendations for the allocation of intensive care treatments in exceptional, resource-limited circumstances: The Italian perspective during the COVID-19 epidemic. *Crit Care* 2020;24:165.
7. Joeleges S, Biller-Andorno N. Ethics guidelines on COVID-19 triage-An emerging international consensus. *Crit Care* 2020;24:201.
8. Kavanagh MM, Erondu NA, Tomori O, Dzau VJ, Okiro EA, Maleche A, *et al.* Access to lifesaving medical resources for African countries: COVID-19 testing and response, ethics, and politics. *Lancet* 2020;395:1735-8.
9. Parker MJ, Fraser C, Abeler-Dörner L, Bonsall D. Ethics of instantaneous contact tracing using mobile phone apps in the control of the COVID-19 pandemic. *J Med Ethics* 2020;46:427-31. doi: 10.1136/medethics-2020-106314.
10. Bereskin, Parr LLP. Making more COVID-19 data available-Privacy and the sharing of patient data in COVID-19 healthcare. Canada: Lexology; 2020 Available from: <https://www.lexology.com/library/detail.aspx?g=26ec67f2-87cf-4a9b-8edc-df36c0745847>.
11. Dunn M, Sheehan M, Hordern J, Turnham HL, Wilkinson D. 'Your country needs you': The ethics of allocating staff to high-risk clinical roles in the management of patients with COVID-19. *J Med Ethics* 2020;46:436-40. doi: 10.1136/medethics-2020-106284.
12. Bhagavathula AS, Aldhalei WA, Rahmani J, Mahabadi MA, Bandari DK. Knowledge and perceptions of COVID-19 among health care workers: Cross-sectional study. *JMIR Public Health Surveill* 2020;6:e19160. doi: 10.2196/19160.
13. Jee Y. WHO International Health Regulations Emergency Committee for the COVID-19 outbreak. *Epidemiol Health* 2020;42:e2020013.
14. Kandel N, Chungong S, Omaar A, Xing J. Health security capacities in the context of COVID-19 outbreak: An analysis of International Health Regulations annual report data from 182 countries. *Lancet* 2020;395:1047-53.
15. Nakazawa E, Ino H, Akabayashi A. Chronology of COVID-19 cases on the diamond princess cruise ship and ethical considerations: A report from Japan. *Disaster Med Public Health Prep* 2020;14:506-13. doi: 10.1017/dmp.2020.50.
16. Gostin LO, Katz R. The International Health Regulations: The governing framework for global health security. *Milbank Q* 2016;94:264-313.
17. Iserson KV. Healthcare ethics during a pandemic. *West J Emerg Med* 2020;21:477-83.
18. Arora A, Arora A. Ethics in the age of COVID-19. *Intern Emerg Med* 2020;15:889-90. doi: 10.1007/s11739-020-02368-2.
19. White PB, Cohn RM, Humbyrd CJ. Medical ethics during a public health crisis: COVID-19. *J Bone Joint Surg Am* 2020;102:e71. doi: 10.2106/JBJS.20.00488.