

Mapping fear among doctors manning screening clinics for COVID19. Results from cloud based survey in Eastern parts of India

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ABSTRACT

Background: As the number of cases of COVID19 from novel corona virus 2019 rises so are the number of deaths ensuing from it. Doctors have been in front in these calamitous times across the world. India has less number of doctors so doctors are overwhelmed with more number of patients to cater. Thereby they are also fearing that they will be exposed much as they often work in limited resource settings. **Methods:** An on line survey was to include doctors from eastern states in India for measuring the reasons of their fear and suggest possible solutions based on the results achieved thus. After IEC clearance a semi-structured anonymous questionnaire was sent on google forms as links on known to doctors, working in screening OPDs or flu clinics especially for COVID-19. **Results:** Out of 59 Doctors majority were provided with sanitizers for practicing hand hygiene. Gloves were provided everywhere but masks particularly N95 and Triple Layer surgical masks were not there for all. Training was not given universally. Fear was dependent on age in our sample. **Conclusion:** Training and strict adherence to infection control measures along with resources can help in removing the fear.

Keywords: COVID19, fear in Doctors, fear related behavior, system issues

Introduction

In modern times perhaps the deadliest and most dangerous pandemic to have struck the human kind has been without any doubt the now named Spanish Flu.^[1-4] It caused 50 million deaths worldwide with Colonial India facing the brunt full on with an estimated 10-20 million deaths owing to the disease.^[3,5,6] Pandemics have been there and to tend to the afflicted, doctors have always been there. At the time of the pandemic “Spanish

flu” doctors were bound by the sense of duty to treat the ill according to the ethical standards at that time which mandated them to be there during epidemics even at the cost of their own health.^[7,8] The pandemic at that time too, consumed lives of doctors and nurses working to treat the patients in hundreds.^[9]

More recent epidemics in the form of SARS (2003), and Ebola (2014) too saw doctors dying in large numbers doing their duties which was different region wise.^[7,10] A doctor treating infectious and fatal diseases is always at risk be it in his daily routine, during epidemics or pandemics, for example tuberculosis has been observed to be more common in medical students in the western hemisphere as well as Indian and other similar scenario. Treating physicians too have been found to be

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Received: 10-06-2020

Revised: 08-09-2020

Accepted: 02-10-2020

Published: 31-12-2020

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_1143_20

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How to cite this article: Jha RR, Verma RK, Kishore A, Rana RK, Barnwal RK, Singh HK, *et al.* Mapping fear among doctors manning screening clinics for COVID19. Results from cloud based survey in Eastern parts of India. J Family Med Prim Care 2020;9:6194-200.

suffering from tuberculosis in early years which later on decreased as knowledge regarding its spread and treatment modalities were made common.^[7,11,12]

As of 30th April 2020 according to WHO the confirmed cases having Coronavirus Diseases 2019 (COVID19) was 309, 445 while deaths owing to the diseases was at 2,17,769 justifying a true Pandemic.^[13] Till 30th April India had close to 25,000 confirmed cases with 1075 deaths from disease in spite of a nationwide restriction on movement or as the popular term is being referred to the “Lockdown” since 22nd March 2020.^[14,15]

Being in a department which has always sought and preached that prevention is better than cure we were involved in capacity building mode from the moment WHO declared the disease COVID-19 to be a pandemic.^[16]

During our capacity building interactions we assessed there was fear and stress present in all doctors working not only in our hospital set up but also from other districts, set ups from other states and Country it was palpable, visible and widely discussed on various media forums be it social media like Facebook, twitter or electronic media and print media. Doctors and general people started to panic by showing signs of mass purchases, hoarding while shopping despite government assurances and announcements.

Indian health set up is grappling with shortage of skilled doctors since many years and if doctors loose their job or life in the times of pandemic the pandemic will take more dire proportions without any rocket science being involved. It's a unique conundrum or benefit risk ratio for doctors to continue to work with fear, misinformation, loss of trust and many a times as per wide media reports of shortage of Personal Protective Equipment (PPE) an important aspect of doctors attire during the screening of patients and treatment.

Government of India, since WHO raised the alarm^[16] has been proactively involving all doctors community via its web-portal mentioned above i.e., mohfw.in. It has been releasing various guidelines regarding the COVID-19 ranging from hospital layout to use of PPE along with online training to build the capacity involving all stake holders^[14]

The current study was aimed to understand various factors related to the fear prevalent among the doctors working across the country and other places. The objectives were to (1) have a brief geospatial profile of the doctors who participated in the study (2) to have an idea about the systems in place needed for preventing the spread of COVID-19 (3) to understand the reasons behind the fear being felt by doctors.

Methodology

Participants

After approval from Institutional Ethical Committee of Patliputra Medical College the study was done, A pre-designed

and semi-structure self-explanatory questionnaire was used to access the information using Google form. Links were distributed via WhatsApp which were unique for every recipient who received the link on his or her smart phone. Demographic and relevant information regarding doctor's place of posting, training status and designation etc., was sought. A brief information regarding the objective of survey was described in the brief. All participation was voluntary and an informed consent was implied if he intended to participate in the survey. It was a completely anonymous questionnaire and participating doctors could not be identified from the material presented in form of study. Google forms were of one page and a single click submit button at the end completed the process. Most of links were shared via known WhatsApp groups of researchers in this study. A total of 155 links were clicked upon but only 59 were completed. Only modern medicine practicing doctors were shared the links.

Measurement instrument

The survey was started on 25th March 2020 and was accepting responses till 25th of April 2020. It had 11 close ended questions while one question was open ended. To check the validity the pilot test was done on 10 interns of the institution. The face validity was found satisfactory as 9 interns found questions to be easy and self-explanatory. Intern trainees who were not given the link later and were strictly told not to participate in this using other mobile phones, was done before sharing the links with known WhatsApp groups. An individual who once participated in the submission was not able to fill it again using the same link. The Checklist for Reporting Results of Internet E-survey (CHERRIES) was adhered to for best results^[17] The contents in the second section was for assessing the systemic requirements in place for checking the transmission and in line with the guidelines provided by the Ministry of health and Family welfare Government of India, seeking details as to provision of Masks or components of PPE as per requirement and Likert scale for subjective assessment of reasons for fear from COVID-19. As the links were shared over WhatsApp it was also an attempt to check whether people actually fill it or not or just pass it along as forwarded messages.

Data Analysis Basic measures of central tendencies were used for all quantitative measures while Chi square tests were employed for checking the association. Univariate Logistic Regression was also used to predict the fear and its dependency on other variables. A *P* value of <.05 was considered as statistically significant.

Results

In our survey we were selective about having only doctors practicing modern medicine, the responses which were complete was 59 in number. Doctors across India were mostly from Jharkhand (55.9%) while other responses were from Bihar (18.6%) Odisha (10.2%), (Eastern part of India) and also more resource limited settings comparatively in India. Maharashtra (3.4%), Pondicherry (3.4%), and other States as well. One response was from US too. Along with responses from general duty

medical officers posted in various OPDs (13.6%), Branch wise participation was noted with (47.5%) from PSM, (8.5%) from internal medicine, (5.1%) from surgery, obstetrics and gynecology, (3.4%) from pharmacology, physical medicine and rehabilitation. We also had participants from anatomy, pathology, microbiology, ophthalmology, orthopedics, pathology and pediatrics with two participants in surgical super specialty wing. In our survey we had mostly interns (33.9%) followed by assistant professors (22.0%) as participants [Figure 1]. We had participants from wide age group with a mean age of 32.98 ± 7.61 . [Figure 1] We applied Chi square for association with gender with age category, and demographic traits and found to be non-significant statistically $P > 0.05$. In our results we found that out of 59 doctors 29 (49.25%) (didn't had any formal training given by either their department, parent institute, or state. 30 doctors were trained (50.8%), primarily by their parent institutes (30.5%), followed by their departments (15.3%) while only (5.1%) were trained by state level. [Table 1]. We also looked in to the systems components required to prevent the transmission of the novel corona virus 2019 as per recommendations by Government of India. The questions to highlight these issues were asked in a subjective manner and the answers were from participating doctor's perspective. As the questionnaire was intended only for those who were either directly screening the suspected COVID-19 patients or were about to do that and working closely with such patients.

We had 76.3% involved in screening process while 23.7% were going to be involved in screening process. Most of the doctors participating were aware that they might get infection during the screening process (94.9%). Social distancing norms have been found to be maintained inside the hospital by maximum of doctors (67.8%). Hand hygiene was found to be practiced by 78.0% of doctors. Mask provided were not provided by their

Institutes in 39%. Only 66.10% were using an appropriate mask like N95 or triple layer surgical masks during their screening OPDs or duty time where they could potentially come into contact with a suspected COVID19 or confirm case. [Table 2]. While majority of the doctors were provided with surgical gloves as per requirement. We had a section of questions which asked specifically the reason for their fear, this was a qualitative assessment based on Likert scale. The questions were 1. Fear of Infection from Respiration of aerosol as they are too close to you 2. Fear of Infection from Touch as you are touching them or are too often touching those surfaces 3. Fear of Infection from yourself as your hands are possible source of Infection and you are using them often 4. Fear of Infection from your clothes as they might carry the infection. We also had a separate blank space for entering their other concerns which were not measured. Likert scale was employed and those who answered question number 3 and 4 as their number one reason for fear, were categorized as the individuals having fear from preventable causes that are in their control. Answers as number 3 and 4 reasons for fear were found to be associated with gender as their P values were less than $<.05$. [Table 3] A univariate logistic regression analysis model keeping the "Fear from preventable causes that are in their control" as the dependent factor was run with other factors. We found only the **age category** as the predictor which was statistically significant with P value less than 0.05. [Table 4].

Discussion

Fear following pandemics, epidemics among doctors and people are nothing new and the resulting behavior perhaps was first described in a realistic way which is even relevant today first in post plague era in London way back in 1912, novel named "The Scarlet Plague".^[17] Pandemics and epidemics of large scale have

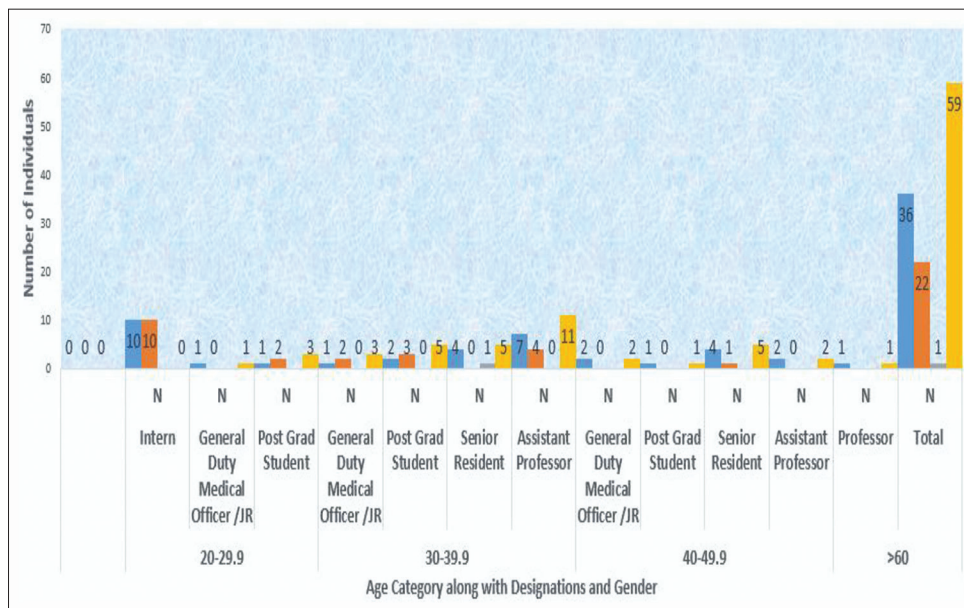


Figure 1: A bar graph showing gender wise doctor's age group along with their designations (Mean Age 32.983 and Std. dev 7.61) ■ Male ■ Female ■ Transgender ■ Total (For all genders)

Table 1: Gender wise distribution of trainings received by the doctors

			Gender			Total	P
			Male	Female	Transgender		
Training Given for n COVID-19	Yes	Count	19	11	0	30	0.579
		%	52.8%	50.0%	0.0%	50.8%	
	No	Count	17	11	1	29	0.795
		%	47.2%	50.0%	100.0%	49.2%	
Training Level	Departmental	Count	4	5	0	9	0.795
		%	11.1%	22.7%	0.0%	15.3%	
	Institute Training	Count	13	5	0	18	0.795
		%	36.1%	22.7%	0.0%	30.5%	
	State Level Training	Count	2	1	0	3	0.795
		%	5.6%	4.5%	0.0%	5.1%	
	Non Formal Training including Social Media etc.	Count	17	11	1	29	0.795
		%	47.2%	50.0%	100.0%	49.2%	
Total		Count	36	22	1	59	0.795
		%	100.0%	100.0%	100.0%	100.0%	

Table 2: Gender wise Distribution of Systems issues like facilities for hand hygiene, social distancing etc

			Gender			Total	P
			Male	Female	Transgender		
Are you screening the Patients for identifying them as suspect n COVID-19 ??	Yes	Count	27	18	0	45	0.164
		%	69.4%	63.6%	100.0%	67.8%	
	In Future	Count	9	4	1	14	0.364
		%	22.2%	22.7%	0.0%	22.0%	
Are you aware about the possibility of being infected from nCOVID-19 during the screening procedure ??	Yes	Count	33	22	1	56	0.364
		%	63.9%	54.5%	100.0%	61.0%	
	No	Count	3	0	0	3	0.92
		%	5.6%	0.0%	0.0%	5.1%	
Are you able to maintain a personal distancing of 1 meter always inside the hospital during the screening.	Yes	Count	25	14	1	40	0.92
		%	69.4%	63.6%	100.0%	67.8%	
	No	Count	8	5	0	13	0.92
		%	22.2%	22.7%	0.0%	22.0%	
	May be	Count	3	3	0	6	0.92
		%	8.3%	13.6%	0.0%	10.2%	
Are you able to hand wash regularly for suggested 2 min minimum before, during, and after screening of the suspect n COVID-19 patients?	Yes	Count	20	9	0	29	0.55
		%	55.6%	40.9%	0.0%	49.2%	
	No	Count	8	12	1	21	0.55
		%	22.2%	54.5%	100.0%	35.6%	
	May be	Count	8	1	0	9	0.55
		%	22.2%	4.5%	0.0%	15.3%	
Are you able to sanitize your hands as suggested during training and elsewhere using hand sanitizer during the screening of suspected n COVID-19 patients ?	Yes	Count	28	18	0	46	0.149
		%	77.8%	81.8%	0.0%	78.0%	
	No	Count	5	2	1	8	0.149
		%	13.9%	9.1%	100.0%	13.6%	
	May be	Count	3	2	0	5	0.149
		%	8.3%	9.1%	0.0%	8.5%	
Are you provided with the Masks and Gloves as per recommendation for all screening of suspected n COVID-19 patients by your respective Institute ??	Yes	Count	23	12	1	36	0.562
		%	63.9%	54.5%	100.0%	61.0%	
	No	Count	13	10	0	23	0.562
		%	36.1%	45.5%	0.0%	39.0%	
The mask provided to you is ?	Any other Mask	Count	5	4	0	9	0.759
		%	13.9%	18.2%	0.0%	15.3%	
	Cloths Mask	Count	6	3	0	9	0.759
		%	16.7%	13.6%	0.0%	15.3%	
	Double Layer Mask	Count	1	1	0	2	0.759
		%	2.8%	4.5%	0.0%	3.4%	
	N95 Mask	Count	15	11	0	26	0.759
		%	41.7%	50.0%	0.0%	44.1%	
	Triple Layer Mask	Count	9	3	1	13	0.759
		%	25.0%	13.6%	100.0%	22.0%	

Table 3: Gender wise response to questions for reasons of fear from novel corona virus infection

			Male	Female	Transgender	Total	P
Number 1 reason for fear during interaction with a suspect or confirmed COVID-19	Q.1	n	17	10	0	27	0.468
		%	47.2%	45.5%	0.0%	45.8%	
	Q.2	n	7	4	0	11	
		%	19.4%	18.2%	0.0%	18.6%	
	Q.3	n	5	5	1	11	
		%	13.9%	22.7%	100.0%	18.6%	
	Q.4	n	7	2	0	9	
		%	19.4%	9.1%	0.0%	15.3%	
	Others	n	0	1	0	1	
		%	0.0%	4.5%	0.0%	1.7%	
Number 2 reason for fear during interaction with a suspect or confirmed COVID-19	Q.1	n	6	3	0	9	0.665
		%	16.7%	13.6%	0.0%	15.3%	
	Q.2	n	15	5	1	21	
		%	41.7%	22.7%	100.0%	35.6%	
	Q.3	n	9	8	0	17	
		%	25.0%	36.4%	0.0%	28.8%	
	Q.4	n	6	5	0	11	
		%	16.7%	22.7%	0.0%	18.6%	
	Others	n	0	1	0	1	
		%	0.0%	4.5%	0.0%	1.7%	
Number 3 reason for fear during interaction with a suspect or confirmed COVID-19	Q.1	n	5	2	0	7	0.000
		%	13.9%	9.1%	0.0%	11.9%	
	Q.2	n	10	4	0	14	
		%	27.8%	18.2%	0.0%	23.7%	
	Q.3	n	12	7	0	19	
		%	33.3%	31.8%	0.0%	32.2%	
	Q.4	n	8	9	0	17	
		%	22.2%	40.9%	0.0%	28.8%	
	Others	n	1	0	1	2	
		%	2.8%	0.0%	100.0%	3.4%	
Number 4 reason for fear during interaction with a suspect or confirmed COVID-19	Q.1	n	6	7	0	13	0.034
		%	16.7%	31.8%	0.0%	22.0%	
	Q.2	n	8	5	0	13	
		%	22.2%	22.7%	0.0%	22.0%	
	Q.3	n	9	3	0	12	
		%	25.0%	13.6%	0.0%	20.3%	
	Q.4	n	11	6	0	17	
		%	30.6%	27.3%	0.0%	28.8%	
	Others	n	2	1	1	4	
		%	5.6%	4.5%	100.0%	6.8%	

Table 4: Univariate Logistic Regression model analysis, fear from factors which can be controlled as the dependent factor

	B	S.E.	df	P	Exp (B)
Age Category	-1.450	0.701	1	0.038	0.234
Gloves Provided to you	0.601	0.960	1	0.531	1.824
Are you able to sanitize your hands as suggested during training and elsewhere	0.202	0.796	1	0.800	1.224
Are you able to hand wash regularly for suggested 2 min minimum before during the screening of suspected n COVID-19 patients	-0.300	0.554	1	0.588	0.741
Are you able to maintain a personal distancing always inside the hospital during the screening?	0.647	0.649	1	0.318	1.911
Are you screening the Patients for identifying them as suspect n COVID-19?	1.415	0.745	1	0.058	4.117
Training Given for COVID-19	-0.489	0.734	1	0.505	0.613
Designation	0.557	0.350	1	0.112	1.746
Gender	-0.468	0.618	1	0.449	0.626
Constant	-0.057	2.241	1	0.980	0.944

been known from early times to bring out the deep rooted fears, increase distrust, increased stress and resultant modification in human behavior.^[18] Doctors being humans are not going to be neutral to these changes and it has been documented during SARS crisis, how doctors were having changed behavior owing to increasing sense of fear from getting infections which ultimately led for some to resign realizing the constant marriage with fear was too much for them.^[19-21] During the disease spread and epidemic of Ebola, Plague too, it was documented that people start panicking, have excessive greed, perform exploitation, stigma is attached, discrimination is done among individuals including doctors and others associated with health care settings, and incidences of false alarms are common.^[21,22]

In our survey population we had more male doctors (36) as participants while 1 participant doctor declared his gender to be transgender. We saw only 59 completed entries. We expected more response as WhatsApp groups practicing modern medicine and involved in screening OPDs to COVID patients were definitely more than 200 according to our nearest estimates based on sheer number of the groups involved. This pattern of doctors not filling or willing to participate in online surveys has been documented earlier in various occasions. It has been shown to be dependent on age, experience, and designation along with specialty.^[23,24] Our survey was completed more by young interns and assistant professors. Training is an integral part of being a doctor, in times of pandemic, epidemic and other major outbreaks training on varied aspects helps in mitigating the situation. In recent times during Ebola and SARS outbreaks training was vital but was not given to everyone which contributed to the fear, stress and altered behavior of the health care workers involved including doctors^[25,26] In our sample we found almost 50% of doctors who were not trained properly by their parent institutes or departments and they resorted to other modalities of training including social media and easily accessible forums which might be providing wrong information. Social distancing norms, hand hygiene and availability of appropriate personal protective equipment components were the mainstay in preventing infection which were under individuals control. Many things apart from this cannot be under direct control of the individual.^[27] These things are emphasized in training sessions so that doctors who are facing such calamities can keep a cool head and work according to a set protocol. Training and logistics supply was of immense value during Ebola in severely resource limited settings like Sierra Leone^[28] in our survey population we also asked about the number of gloves and masks being provided. According to the responses we can say that in most places gloves were supplied but when it came to the supply of N95 or triple layer masks the numbers were on a lower side as only 66.3% respondents were having it procured from various sources including their institutes. As quoted above these scenarios are nothing new and cutting across the boundaries whenever a pandemic or epidemic strikes resources are not in abundant supply. Rational use and appropriate management saves the day. Fear and fear related behavior have been widely observed during epidemics or pandemics cutting across the boundaries^[7,18,19,27,28] Generally it has been seen that

if the proper training practices for infection control measures are adhered to with appropriate logistic supply the fear can be overcome. In our survey sample we got the results which suggest few doctors are having fear from factors which they can control and this fear can be lessened if quality training can be provided to them. These findings have been seen during most epidemics, pandemics apart from the dedicated health care workers including doctors who venture to tackle or take care of infective patients without any personal protective equipment.^[26-28] In recent times owing to COVID-19, evidences regarding evaluation of fear among doctors and health care workers have been published across nations with somewhat similar results.^[29-31] In our survey we had more participants from Bihar, Jharkhand and Odisha which are eastern states and traditionally have been having languishing health indicators.^[32] As time progress COVID-19 will spread more including hinterlands of the country, where specialist care might be hard to find. These patients will need doctors who are accessible to them, can provide them with integrated services, can develop a sustained partnership with them and they are in context to their local needs and community.^[33] In short they will want primary care physicians who are trained with every aspect of the disease and can themselves be free from the fear so that they can tend the patients with all infection prevention control measures and treat the patients with appropriate care and support.

Conclusions Our study on a doctor population in survey form provided over internet using google forms is to our understanding a novel approach to understand the fear, and fear related behavior in times of pandemic in India. Novel Corona Virus has been causing widespread lockdown across the nations and physicians are among the essential medical service providers doing their duty with sincerity. Doctors need to be trained timely, efforts must be made for availability of appropriate logistic support along with right Personal Protective Equipment (PPE) to minimize the risk of infection. These can help to mitigate the fear which might creep inside the mind of the doctors working to fight with this deadly disease in spite of many heroes who do their duty without having minimalistic personal protective equipment which might actually increase the spread of infection and can cause surge in numbers of COVID-19 positive cases.

Limitations A large sample size of participants from other institutes could have added much value.

Acknowledgements

We acknowledge all participating doctors during COVID-19.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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