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Impact of COVID-19 on medical practice

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Abstract---Initiating from China, the contagious virus namely COVID-19 spread at really high rate all over the world. In the starting stage, healthcare officials were considered as front-line warriors. The current study focuses on analysing the impact of COVID-19 on medical officials in order to identify the risks and protective factors of their mental health stress level. The parameters considered were socio-demographic variables, exposure to the patients suffering from COVID-19 and the strategies employed for coping with and deal with distress. A total of 100 healthcare professionals enrolled in the current study and completed the all the parameters. This study has demonstrated that positive attitude towards the stressed situation. Comprehensively, it is found that has been emerged due to the COVID-19 pandemic. This study highlighted the major coping strategies employed by healthcare professionals to get rid of highly stressful situation caused by COVID-19 outbreak.

Keywords--COVID-19, medical officials, stress, coping strategies.

Introduction

The World Health Organization (WHO) declared the occurrence of novel coronavirus or COVID-19 on January 30, 2020. This zoonotic virus originated from Wuhan province of China. WHO declared COVID-19 a Public Health Emergency of International Concern (PHEIC). Coronavirus was the sixth PHEIC under the International Health Regulation (IHR). Many viruses affected the world prior to this COVID-19 virus including H1N1 influenza, Polio, Zika, Ebola etc. Coronavirus proved to be different from all these stated viruses because of its transmission, speed of outbreak, everyone was having fear of getting condemned. It was very stressful as the entire world was quarantined. The alarming situation caused due to this virus led to distress and anxiety all over the world (1-4).

In India, the number of patients infected with COVID-19 substantially increased since 27 January, 2020 when first patient was identified who was COVID-19 infected. Government of India declared a lockdown in country on 28 March 2020. Due to the dramatic emergency, the guidelines and extraordinary measures were implemented to limit viral transmission. Everyone's life got affected and changed due to restrictions of movement and socialization. No person was allowed to move out of the house, some of the people lost their jobs and there was a situation of stress and anxiety all over (1,2,5). The infected people were mostly adults with age ranging from 30-79 years and least affected were the people below age of 20 years. The incubation period of the disease as claimed by World Health Organization (WHO) and Centres for disease control and prevention (CDC) was between 2 and 27 days with the median of 14 days (4). 14 days of quarantine was hence recommended by these organizations. The infection was spread through droplets from nose or mouth. The health authorities therefore generated certain measures like social distancing, home quarantine. After the coronavirus outbreak, researchers, clinicians, scientists and health authorities all over the world came together to fight against this contagious viral disease. The obscure situation all over the world had the worst effect on the livelihood of the entire population of the world, this provoked the need of research to ascertain the cause and nature of the contagious virus. The spread of disease also led to harmful stereotypes in the society. As a result, the infected individuals started to hide their problems to get rid of discrimination which made them devoid of seeking immediate medical intervention. (3,5)

With the rise in the number of COVID-19 patients, the healthcare authorities suggested the organizations working under them to focus on the requirements of medical care and provide access to everything to the needful. The main goal was to make sure that all the resources are ready and available with the medical staff and clinical authorities. These resources included ample amount of emergency funds, proper documents or posters to educate the people regarding the disease and its control measures, medical supplies, equipment's for personal protection, etc. All the healthcare, non-healthcare organizations, health departments, pharmaceutical companies and other organizations of all the states came together to dwindle the spread of coronavirus (1,3,6-8).

The anti-dotal strategy used by medical officials across the world to fight against the viral disease was:

- To identify and separate the suspected individual
- Trace the contacts of the suspect
- Collection of biological and clinical data
- Consent of medical expert intervention
- Increase in number of medical staff in hospitals and quarantine areas
- These measures helped in tackling the pandemic but had severe effect on the mental health of the health care workers.

Past Outbreaks and COVID-19

A study was conducted in which the families who lost their families and victims suffering from MERS were surveyed. They claimed that they were discriminated by the society. Even after getting recovered, they were isolated and were not allowed in the society. Moreover, incubation period varied and was not defined as it is in COVID-19. The incubation period was considered longer as usual. COVID-19 does not have much difference with MERS and SARS. All the claims were quite similar regarding spread of infection along with high level of fear and distress among the people which caused high anxiety level among the people. (4-8)

Earlier occurred epidemics caused severe emotional distress among the healthcare officials. It was presumed that these healthcare professionals face depression, anxiety. Post-traumatic stress disorder (PTSD), and burnout after the occurrence of such infections. (4) During SARS outbreak, a survey was conducted which revealed that 18-57% of medical officials were going through emotional distress during the onset until the termination of the infection. When Ebola outbreak occurred. Many medical practitioners were mostly infected. (7,8) They worked for longer hours and were not having personal protective equipment and driven mainly by compassion. In the same say, COVID-19 caused more significant mental health on healthcare professionals.

SARS outbreak occurred in 2002-03, ethical issues were raised including:

- Responsibilities and Role of healthcare officials
- Effect of infection on the people and economy all over the world
- Equitable care
- Challenge of maintaining balance between public welfare and individual rights.

The outbreak of epidemic caused reduction in economy. Thus preventive measures were must to minimize the economic effects of the pandemic on travel and trade restrictions. The pandemic had immense effect on the existing illness, causing anxiety and distress among healthcare workers and affected people which in turn caused the rise in mental health problems among the people of different age groups. It was prescribed to avoid attention towards media and its reports, focus must be maintained on consumption of healthy diet and positive lifestyle.

Positive attitude is important to comfort oneself from all the negative thoughts, fear and anxiety. It is also imperative to seek advice from government sources rather than following the erroneous information from different sources. (1,3,6)

COVID-19 is severe acute respiratory viral infection which can be transmitted from one person to another through contact. Therefore, there were high chances of accidental transfer of infection from patients to health workers. Some doctors took this professionally and made it a positive Experience by caring and treating the patients and feeling a sense of achievement and personal satisfaction. The doctors became more committed towards their duties and worked for longer hours to treat the patients. Certain negative reactions were also seen among the health care workers. The most imperative one was the risk of accidental infection. This caused stress, anxiety and depression among them. (1-3)

Health workers continued to work uninterruptedly in the critical situation, they were on high risk of getting infected with COVID-19. Healthcare professionals were the most vulnerable categories to develop physiological stress and other mental health symptoms. It is stated that degree of stress can affect the task. The past epidemics have revealed that healthcare workers usually have high stress levels. Such situations might increase their stress and can be associated with other variables including anxiety and depression. Health care workers were provided proper guidelines for work and were supposed to keep the healthcare system intact and devoid of making hospitals become 'super-spreaders'. Healthcare workers usually faced stress in their profession because they had to deal with patients suffering from COVID-19. This stress might be caused due to the poor work environment, inadequate family conditions and fear of getting infected by the viral disease during infection with patients. (1-3,6)

This viral disease spread all over the world like a forest fire and had a devastating effect on the economy of many developing countries. In India, despite the presence of well-experienced and educated medical professionals, the infected population kept on increasing and became the main reason for stress. Lots of people lost their lives, along with a high mortality rate, this pandemic caused mental catastrophe and psychological problems to the world. Researchers have found that people who are usually going through job stress, do not perform well in their organization, it may affect their loyalty towards their job. Moreover, the quarantine practice at a remarkable level caused delirium, anxiety, fear and other psychological problems especially to the doctor.

It was found that there is a neuropsychiatric linkage between the contagious virus and mental disorders. The quarantined population, despite the mental disorders, suffered from boredom, anger and loneliness. The symptoms of coronavirus included fever, cough, headache etc. and in severe conditions, it might lead to worsening cognitive distress. It was reported that COVID-19 can also be caused by or transmitted through mildly-ill or pre-symptomatic infected individuals hence, it became a challenge to get rid of this disease as compared to Middle East respiratory syndrome (MERS) and severe acute respiratory syndrome (SARS). (4)

Coping with Mental Health

Healthcare workers in COVID-19 pandemic faced significant challenges in coping with the situations. It was a real challenge for medical practitioners to cope up with the recent crisis. Coping basically is the actions and thoughts of a person that he employs to deal with stressful situations. These coping strategies focuses either on solving the problem or to change the situation. Other strategy is to reduce the emotional stress associated with the situation. These coping strategies are quite helpful for an individual for dealing with stressful situations and to emit out negative emotions. Establishment of psychiatric treatment team should be done. The team must comprise of psychiatrists, nurse, psychologists, case managers and social workers. The team would provide mental health support to the medical officials and the affected patients.

The entire team must function in planned manner. Recent updates in regarding the pandemic must be provided to the psychiatric treatment team and also to the patients and family members. Implementation of electronic information sharing techniques must be done. These include telemedicine, telepsychiatry, counselling and promotion of legal information. (1,3,6) Time-bound behavioural therapy should be provided to the people who have disturbed mental health. This therapy aids in reducing the cognitive effects of pandemic. The behavioural and emotional responses of the person must be coupled with psychotherapeutic treatments according to the models of stress adaptation. (2,3)

Psychological First Aid (PFA) is the new advancement which focuses on the mental health of infected people and helps in providing mental health support during COVID-19 crisis. This PFA tool is designed to attenuate acute stress and providing access to the mental healthcare. Mental support was provided through empathetic and supportive presence. Many PFA models were made and were available for emergency management. All tools focus on conciliating the emotionally stressed individuals by offering practical help, providing safety and comfort. Hence, PFA is an essential tool for healthcare workers and the infected people for coping with the traumatic events causing distress and anxiety during COVID-19 crisis. (4)

Materials and Methodology

Designing and Validation of the survey questionnaire

A cross sectional study was conducted via online survey questionnaire. For the study well-constructed open end questionnaire was designed on www.Googleforms.com. The questionnaire was circulated via email, Whatsapp and Facebook to the different health care professionals across the country. Completion time was approximately 5 minute. All the professional were anonymized to ensure frank response. They were also requested to forward and circulate the questionnaire to their colleagues. They were also informed that their part taking was optional. Moreover, no incentives were provided to the participants for filling this survey.

Questionnaire for the health care professionals

The questionnaire comprised of 4 sections with 25 questions. After explaining the purpose and procedure of the research consent was taken from each participant regarding their inclusion in the research. The first section comprised of the introductory part in which the entire aspect of COVID-19 in the medical field and aim of study was discussed. The second section consists of the participant's socio-demographic details. The third section comprised of the questions that were related to impact of coronavirus pandemic on the health care practice. This section included questions regarding the functioning of their departments conducting outpatient department and surgeries. Telemedicine conductance was also questioned. The fourth section comprised of the questions in which the surgical practice was asked pre and during the COVID -19. The last supplementary section was added and it focused on the adaptations and the impact of COVID-19 on personal life of health care professionals.

Results

100 responses were recorded and were included for final data analysis. Section- I included the introduction part in which the COVID-19 situation has been discussed briefly and the aim of the study has been demonstrated.

Section II: Socio-demographic profile

There were 100 eligible respondents (52 males and 48 females) with commendable and appreciable representation all over India. In total, 59 participants were less than age of 45 year and whereas 41 were more than 45 year of age. All the respondents were native of India. In terms of experience of 1-5 year, 22 respondents were working in health care systems in 5-10 year experience category, 32 participants were there whereas, under the category of 10-15 year experience, 40 individuals responded to the questionnaire and 6 respondents were having experience more the 50 years. In total 48.5% participants worked in private hospitals, while 51.5% respondents worked in civil hospitals.

Out of 100 respondents, 30% were unmarried, while 66% were married. The proportion of widow was quite less as it was 4% respectively. Furthermore, talking about families, 62% of respondents were having children while remaining 38% were having no children. All the respondents worked in different departments of medical field such as gynaecology, neurology, physiotherapy, cardiology, urology, radiology, orthopaedics, dermatology, forensic medicine, dentistry etc. some of the respondents were in teaching position too. Majority of the participants that is 62.6% had treated the COVID-19 infected patients. Out of all the respondents 14% were smokers.

Table 1. Socio-demographic characteristics of the study. (N=100)

<i>SAMPLE CHARACTERISTICS</i>	<i>N (%)</i>
GENDER	
MALES	48%
FEMALES	52%

AGE	
<45 YEARS	59%
>45 YEARS	41%
NATIONALITY	
INDIAN	100%
MARITAL STATUS	
MARRIED	66%
UNMARRIED	30%
WIDOW	4%
PRESENCE OF CHILDREN	
YES	62%
NO	30%
WORK EXPERIENCE	
0-5 YEARS	22%
5-10 YEARS	32%
10-15 YEARS	40%
>15 YEARS	6%
AFFILIATION	
GOVERNMENT	51.5%
PRIVATE	48.5%
TREATED COVID-19 PATIENTS	
YES	62.6%
NO	37.4%
SMOKING STATUS	
YES	14%
NO	86%

Section -III: Impact on practice

Departments of most respondents (81.8%) conducted OPD during the pandemic, while 69% of the respondents completely switched towards telemedicine. The survey demonstrated that 63% of doctors/ health care professionals continued with elective surgeries during COVID-19 crisis. During the examination of patients, 52% of respondents wore N-95 masks, where as 27% wore surgical mask. Face shield was used by 10% of the professionals, whereas only 5% of doctors used full personal protection kit. High percentage of heath care centres 93% employed thermal scanning as well as other diagnostic test for screening the patients. For prior testing patients with the high risk of COVID were suggested to get tested for COVID (37.4%) whereas, all the people visiting OPD's were requested to get tested for COVID -19(25.3%), 14.1% of the people were tested as they wanted an elective surgery.

Table 2. Impact of COVID-19 pandemic on the medical practices

QUESTIONS	N(%)
DOES YOUR DEPARTMENT CONDUCTED OPD?	
YES	81.8%
NO	18.2%

DOES YOUR DEPARTMENT EMPLOYED THERMAL SCANNING OR DIAGNOSTIC TESTS?	
YES	93%
NO	70%
DOES YOUR DEPARTMENT CONDUCTED TELEMEDICINE?	
YES	69%
NO	31%
DOES YOUR DEPARTMENT CONDUCTED ELECTIVE SURGERIES?	
YES	63%
NO	37%
WHICH PATIENTS WER TESTED FOR COVID-19?	
PATIENTS WITH HIGH RISK OF COVID-19	37.4%
ALL PATIENTS VISITING OPD	25.5%
ADMITTED PATIENTS	15.2%
PATIENTS WANTING ELECTIVE SURGERIES	14.1%
NONE	8.1%
DURING EXAMINATION OF PATIENT, YOU PREFERRED TO WEAR:	
SURGICAL MASK	27%
N-95 MASK	52%
FACE SHIELD	12%
SURGICAL GOWN/CAP	4%
PPE	5%

Section-IV: Impact on surgery

77 % of the health care professionals asked the patients regarding their travel history as mandatory parameter whereas 17% might consider this parameter for the surgery. In total 78.4% said they would operate with PPE on patients with negative COVID -19 reports and having no symptoms. On the other hand, when asked the similar question with negative COVID -19 report but with symptoms of COVID-19, 91.8% preferred to operate with PPE. A total of 15.5% of respondents have not used PPE, 37% reported that wearing PPE affect their surgical performance adversely, where as 11.3% felt that it made no difference. 36% participants reported that wearing PPE improved their surgical performance.

Table 3. Impact on Surgery

QUESTIONS	N (%)
PATIENTS WERE ASKED REGARDING THEIR TRAVEL HISTORY PRIOR TO TREATMENT	
YES	77%

NO	6%
MAYBE	17%
IN YOUR PRACTICE, WHEN YOU ENCOUNTERED A PATIENT WITH NEGATIVE COVID-19 REPORTS AND THE PATIENTS BEING ASYMPTOMATIC, YOU OPERATED THE PATIENT	
WITH PERSONAL PROTECTIVE EQUIPMENT (PPE)	78.4%
WITHOUT PPE	21.6%
IN YOUR PRACTICE, WHEN YOU ENCOUNTERED A PATIENT WITH HIGH RISK FEATURE OF COVID-19 BUT NEGATIVE REPORTS YOU OPERATED THE PATIENT	
WITH PPE	91.8%
WITHOUT PPE	8.2%
ANY MODIFICATIONS WERE MADE IN HOSPITALS/CLINICS FOR MAKING THEM COVID-19 SAFE?	
YES	96%
NO	4%
HOW YOUR PERFORMANCE IN DOING SURGERIES GOT AFFECTED BY WEARING PPE KIT?	
POSITIVELY	36.1%
ADVERSELY	37.1%
NO DIFFERENCE	11.3%
NOT OPERATED IN PPE	15.5%

Section-V: Impact on personal life

70.7 % respondents said that pandemic has adversely impacted their academic work that they were pursuing. When asked about how they spent their idle time in lockdown, 21% said that they were doing self-practise, 19.2% were writing publications whereas, 12% engaged themselves in conducting webinars. Major percentages 47.5% were engaged in other and miscellaneous activities. An unstructured question was asked to all participants regarding their way of dealing with the mental stress. All the respondents gave their views regarding the same. Some spent time with their families; some listened to prayers and watched motivational videos, other dealt with stress by pursuing their hobbies, engaging themselves in to yoga, medications and exercise. The young practitioners played games and watched movies.

Table 4. Impact on Personal Life

QUESTIONS	N (%)
DOES THIS PANDEMIC AFFECTED YOUR ACADEMIC WORK?	

YES	70.7%
NO	15.2%
NOT APPLICABLE	14.1%
HOW YOU SPENT YOUR IDLE TIME DURING LOCKDOWN?	
WRITING PUBLICATIONS	19.2%
CONDUCTING/ATTENDING WEBINARS	12.1%
SELF PRACTICE	21.2%
OTHERS	47.5%
DOES WORKING IN COVID-19 CRISIS INCREASED STRESS IN YOUR LIFE?	
YES	91.9%
NO	8.1%

Discussion

Medical fraternity has faced a distinctive challenge of safeguarding themselves from the patients suffering from COVID-19. The extremely infective nature of virus as well as large proportion of symptomatic carriers put medical practitioners at high risk. The major challenge is to maintain the health care system intact and to avoid hospital from becoming the “transmitter”. This has convinced the medical practitioners to change their practices in accordance with the changing time. The current study to focuses to analyse the impact of the COVID-19 on medical practitioner. We had analysed the relationship between risk factors along with their preventions and the stress level in the medical employees. Firstly we investigated the presence of some socio-demographic variables such as gender, age, experience, martial and smoking status, and presence of children. The other variable considered was direct exposure to COVID-19 infected patients. We had also gathered information regarding the coping strategies because of correlation of studies no suitable conclusion would be stated. Our outcomes may contribute to understand the mental pressure of health care workers that gave services during COVID-19 pandemic. A negative correlation was found between socio demographic status as well as the COVID-19 pandemic. The further motive of our study was to explore whether working or not in COVID-19 outbreak and dealing with patients suffering from the disease as well as the coping strategies were helpful in predicting stress level. The results itself were self –explanatory. Conclusively, it was true that working in COVID-19 crisis enhanced the stress level. With regard to coping strategies, we ascertained that positive attitude was indestructible factor against mental stress. The earlier studies have also revealed that sanguine attitude is the best strategy to cope with mental stress. Having positive attitude relates with self-efficiency, great psychological well-being and improved life quality. We also observed that other coping strategies mainly spirituality and indulging in hobbies. Both these strategies were considered to get rid of mental stress by health care professionals

Conclusions

The outcomes of this study are not generalized to other professional groups and the situations that are apart from the current COVID-19 pandemic. First and

foremost, the cross sectional design of the study precluded the analysis of the effects of distress on healthcare professionals. Secondly the samples were unequally distributed with respect to gender. The authors conclude that there is high requirement of protocols, proper screening, and rotation at work and better availability of user friendly PPE kits and more awareness about telemedicine and webinars. All the medical practitioners should be provided with psychiatric counseling. An alternate for elective surgeries should be found to get the adequate knowledge, it would be helpful to extend this research to post pandemic including all the medical officials that have played an immense role in COVID-19 crisis so that we have ample amount of knowledge.

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