



EVALUATION OF PSYCHOLOGICAL IMPACT OF THE CURRENT COVID-19 PANDEMIC ON DOCTORS AND ITS INFLUENCE OVER THEIR PROFESSIONAL SPHERE

Obstetrics & Gynecology

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ABSTRACT

BACKGROUND: COVID-19 pandemic put global socio-economic structure as well as healthcare system under threat; unexpected devastation led to significant morbidity & mortality even in highly developed countries. Frontline healthcare professionals were affected in large with high mortality. **AIMS & OBJECTIVES:** To assess the psychological impact of the pandemic on Doctors and their professional burnout. **MATERIAL & METHODS:** This was an offline-questionnaire-based cross-sectional study with our tertiary care hospital faculties from mid-October to mid-November, 2020. Psycho-social impact (risk perception, acquisition of new-normal habits and social impact), emotional states (depression, anxiety & stress) and professional fulfillment were assessed in different scales with data regarding demographic profile. **RESULTS:** Psycho-social impacts of pandemic were mostly of moderate extent (48.61%, 49.17% & 49.72% respectively). Emotional states of doctors were predominantly normal (75.69%, 70.17% & 74.03% respectively). Faculties are mostly professionally fulfilled (67.96%) with less burnout (20.44%). **CONCLUSION:** Doctors are quite resilient even in pandemic crisis with moderate psychological impact. Socio-economic and professional challenge could not affect their emotional status with little burnout.

KEYWORDS

Burnout, emotional states, healthcare professionals, psycho-social impact

INTRODUCTION:

Corona Virus Disease 2019 (COVID-19) is highly contagious one, affecting public health and socio-economic sphere globally. First human case of COVID-19 was reported by Chinese authorities in December 2019 in Wuhan city of China. On 30th January 2020, the Director General of the World Health Organization (WHO) declared the outbreak of COVID-19 to be a "Public Health Emergency of International Concern" (PHEIC) [1] and on 11th March 2020, the WHO has officially characterized COVID-19 as "Pandemic" [2].

After devastation through first world countries, COVID-19 cases with significant morbidity & mortality have been detected from all the states of India; and our West Bengal has not been escaped. Efforts are being made from both government and non-governmental sectors; yet India has started facing second wave of pandemic wrath.

Long continued battle against a super-infectious "micro-guest" changes the priorities of general population; and new-normal socio-economic scenario with unusual working-exploitation impacts deeply on mental health & well-being of the frontline health care professionals. Doctors take the brunt the most; yet, only few published studies [3-7] focusing particularly on mental health and professional burnout of doctors have been found in literature in current pandemic scenario.

AIMS & OBJECTIVES:

To assess the psychological impact of the pandemic situation on Doctors as well as their professional burnout.

MATERIAL & METHODS:

Study Type: An offline-questionnaire-based cross-sectional study.

Study Population: Hospital Doctors.

Study Area: Our hospital, RG Kar Medical College & Hospital is a tertiary care teaching institute situated in north Kolkata, West Bengal, a state in eastern India.

Study Duration: One month (mid-October to mid-November, 2020) when prolonged home-locked Bengali population carelessly enjoyed festive season whereas health-sector was in fear about upcoming case-spike and fatality.

Sample Size calculation: Assuming 95% Confidence Level, 5%

Margin of Error, 50% Population proportion; for a cohort size of 318 (existing hospital faculties), sample size was calculated online (calculator.net ©2008-2020) as 175. Adjusting 10% non-responders or quarantined/admitted ones, 193 faculties were finally calculated to be approached.

Inclusion Criteria: Faculties of different departments.

Exclusion Criteria: Post-graduate trainees and Interns.

Strategy for data collection: Existing hospital faculty list had been prepared in alphabetical order; simple random sampling technique was applied and random number table generated online (2020 stattrek.com) to allocate participants as per sample size need. Allocated doctors were approached by the investigators asking for voluntary participation and filling up study proforma with questionnaire.

Description of Study Proforma: Study proforma had five segments; segment-1 is about demographic profile with variables included like age, gender, speciality, designation, co-morbidities, weekly duty hours and duty in high-risk areas; segment-2 assessed the perceived risk of the pandemic with semi-structured questionnaire prepared from CoPaQ (COVID-19 Pandemic mental health Questionnaire); segment-3 assessed the emotional state of doctors developed in pandemic scenario with DASS-21 (Depression, Anxiety, and Stress Scale); segment-4 evaluates social impact on participants and how far they are accustomed with new-normal habits with semi-structured questionnaire prepared from CoPaQ; and segment-5 used Stanford PFI (Professional Fulfilment Index) to assess professional fulfilment and overall burnout in this pandemic era. All scales have been permitted to be used by the authorities for non-profit field research with free online download option.

CoPaQ [8] is a highly comprehensive self-report measure of the psycho-social impact of the current corona virus crisis, developed in a collaboration effort between the Ludwig Maximilian University Munich (GER) and the University of Oxford (UK). As there is no scoring system available as mentioned in permission letter, we have used CoPaQ partly in our study proforma and calculated the score of segment 2&4 by taking average of all items so that score could range from 0 to 4 and we could explain results according to their distribution of scale (0 = Not at all / 1 = to some extent / 2 = moderate extent / 3 =

considerable extent / 4 = very much). DASS-21 [9] is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three contains 7 items, divided into subscales with similar content. Scores on the DASS-21 will need to be multiplied by 2 to calculate the final score. There is recommended cut-off scores for assessing severity levels (normal, mild, moderate, severe & extremely severe) specified by the authority. The Stanford PFI is a 16-item instrument designed to assess the degree of intrinsic positive reward, the individual derives from his or her work (i.e. professional fulfillment) as well as negative aspects (i.e. burnout) [10]. Scale scores are calculated by averaging the item scores and cut-off was specified by permitted authority. Professional fulfillment scale (6 items) cut-off is 3.0; those with average scores of ≥ 3 are more likely professionally fulfilled. Overall burnout scale (10 items- 6 for interpersonal disengagement and 4 for work exhaustion) cut-point is 1.33; those with average scores of ≥ 1.33 are more likely to be experiencing burnout.

Ethical Approval: This study was approved by the Institutional Ethics Committee.

Consent: Written informed consents were obtained from all potential participants.

Data Analysis: Data had been tabulated in excel sheet (Microsoft Office Excel 2007) and analysis has been done with the help of MedCalc Statistical Software byba - 2018. Chi-square and significance level were assessed as required. $P < 0.05$ was considered as statistically significant.

RESULTS:

A total of 193 eligible hospital faculties were approached as per calculation; five faculties refused to participate and seven faculties were admitted & later quarantined in that period; thus, ultimately data was gathered from 181 doctors for the study.

Irrespective of demographic variables, psycho-social impacts of pandemic were found mostly of moderate extent i.e. risk perception (48.61%), acquisition of new-normal habits (49.17%) and social impact (49.72%). Emotional states (depression, anxiety & stress) of doctors were predominantly normal (75.69%, 70.17% & 74.03% respectively). Overall, faculties are professionally fulfilled (67.96%) with less burnout (20.44%) even in such struggling period. (Table 1)

Table 1: Overall scenario (Irrespective of demographic variables) (n=181)

Psycho-social impacts	Distribution pattern				
	Not at all	To Some extent	Moderate extent	Considerable extent	Very much
Risk perception	00	38	88	49	06
New normal habit acquisition	01	46	89	42	03
Social impact	06	54	90	30	01
Emotional states	Severity levels				
	Normal	Mild	Moderate	Severe	Extremely severe
Depression	137	13	20	07	04
Anxiety	127	08	27	09	10
Stress	134	16	15	12	04
Professional fulfillment	Present		Absent		
	123		58		
Burnout	Present		Absent		
	37		144		

Most (55.8%) of the faculties were from 40-60 years age group and none were devoid of any risk perception. Interestingly at considerable extent, all psycho-social impacts became steadily less as the age increased. Among the faculties found with depression, increasing proportion of severe & very severe ones were detected as the age increased (14.29%, 31.58%, 50%); but result was found reversed when stress is considered (40%, 31.82%, 20%). Younger faculties were found more with severe/very severe anxiety and burnout, though not significant ($p = 0.6972$ & 0.8606 respectively). Professionally fulfilled doctors were mostly (72.28%) from 40-60 years age group.

Male faculties were found to have more risk perception in every impact level except in considerable extent (though not significant; $p = 0.2129$).

On the other hand, female faculties were found to adopt new normal habits more in every impact level except in moderate zone. Social impact only in considerable zone were more on male doctors (though not significant; $p = 0.4162$). Considering emotional states (depression, anxiety & stress) in severe and extremely severe range, female doctors were found more affected (30% vs 23.53%, 41.67% vs 33.33% & 45.45 vs 30.56%). Proportion of female faculties was found to be more professionally fulfilled (72.34% vs 66.42%) with almost similar levels of burnout (19.15% vs 20.86%).

Pandemic risk perception and acquisition of new normal habits are more seen in non-clinical faculties in all extent except in considerable zone. Social impact is more seen on clinical faculties (moderate- 53.38% vs. 39.58%; considerable- 18.04% vs 12.5%). Faculties irrespective of specialty were mostly with non-severe depression; severity was more with clinical ones (27.59% vs. 20%). Anxiety levels were very close between non-clinical and clinical doctors at all extent and most faculties were with mild-moderate anxiety. Interestingly, non-clinical faculties were found to have significantly more stress (95% CI, 32.87%-78.83%; $\chi^2 = 17.74$; $DF = 1$, $P < 0.0001$) at severe/extremely extent. Overall, most participants were professionally fulfilled with less burnout; clinical faculties were found to have significantly more burnout (95% CI, 6.81%-28.32%; $\chi^2 = 8.043$; $DF = 1$; $p = 0.0046$). (Table 2)

Table 2: Specialty wise evaluation of different aspects [Non-clinical (n=48) // Clinical (n=133)]

Psycho-social impacts					
	Not at all	To some extent	Moderate extent	Considerable extent	Very much
Risk perception					
Non-clinical	00	11	25	11	01
Clinical	00	27	63	38	05
New normal habit acquisition					
Non-clinical	00	13	28	07	01
Clinical	01	33	61	35	02
Social impact					
Non-clinical	01	22	19	06	00
Clinical	05	32	71	24	01
Emotional states					
	Normal	Mild	Moderate	Severe	Extremely severe
Depression					
Non-clinical	33	03	09	01	02
Clinical	104	10	11	06	02
Anxiety					
Non-clinical	29	02	10	02	05
Clinical	99	06	16	07	05
Stress					
Non-clinical	28	03	05	08	04
Clinical	106	13	10	04	00
	Professional fulfillment		Burnout		
	Present	Absent	Present	Absent	
Non-clinical	34	14	03	45	
Clinical	89	44	34	99	

Moderate pandemic risk perception was more with professors (51.43%) but at considerable extent, seniors were perceived lesser risk. Social impact was significantly less ($p = 0.0332$) on senior most faculties and they adopted new normal habits lesser. Emotional status was found mostly non-severe among different faculties; depression levels were too close among doctors with different designations. Interestingly at severe/extremely severe extent, senior most doctors were found with less significant ($p = 0.0443$) anxiety and junior most segment was significantly stressed ($p = 0.0130$). With increasing seniority level, faculties were found with more professionally fulfilled with lesser degree of burnout.

Interestingly, risk perception was not always seen more in faculties with co-morbidities. Moreover, faculties with absent co-morbidities adjusted more with new-normal habits; even at considerable extent, social impact was found significantly more ($\chi^2 = 5.91$; $DF = 1$; $p = 0.0151$) on them. Emotional status was found mostly non-severe

among faculties with variable co-morbidities. Interestingly, faculties with co-morbidities were found with more professionally fulfilled with lesser degree of burnout. (Table 3)

Table 3: Evaluation of different aspects in relation* to co-morbidities (CM)

Psycho-social impacts					
	Not at all	To some extent	Moderate extent	Considerable extent	Very much
Risk perception					
CM- absent	00	18	49	24	04
CM- present	00	20	39	25	02
New normal habit acquisition					
CM- absent	00	27	38	29	01
CM- present	01	19	51	13	02
Social impact					
CM- absent	01	28	45	20	01
CM- present	05	28	45	07	01
Emotional states					
	Normal	Mild	Moderate	Severe	Extremely severe
Depression					
CM- absent	66	08	16	02	03
CM- present	71	05	04	05	01
Anxiety					
CM- absent	63	05	14	07	06
CM- present	64	03	13	02	04
Stress					
CM- absent	72	06	06	08	03
CM- present	62	10	09	04	01
	Professional fulfillment		Burnout		
	Present	Absent	Present	Absent	
CM- absent	59	36	28	67	
CM- present	64	22	09	77	

*CM- absent (n=95) // CM- present (n=86)

Risk perception and social impact were more in faculties with higher weekly duty hours whereas new-normal habits were more adopted by faculties spent less weekly duty hours. Emotional status, overall, was found mostly non-severe. Interestingly, faculties with higher working hours were less professionally fulfilled (100%, 73.91%, 60.47%) with significantly higher degree of burnout ($p=0.0008$).

Mixed results were found with psycho-social impacts in relation with type of exposure; but at considerable extent, more impacts were seen in faculties having continuous exposure (27.94% vs 25.64%, 27.94% vs 23.08%, 23.53% vs 15.38%). Doctors having nil exposure in high-risk areas were found to have more depression and stress. Interestingly, faculties with continuous exposure in high-risk areas were less professionally fulfilled (61.76% vs 66.67%) with higher degree (26.47% vs 21.79%) of burnout.

DISCUSSION:

Possible disclosure of personal facts restrains few faculties from participation even after assurance. Galbraith et al from Canada in a special article [3] highlighted this aspect that doctors are often reluctant to disclose mental health difficulties or seek help for them due to social stigma.

In a report [11] in public health in Brazil, Ornell et al admits that besides biological context, coping with wide and long-standing changes in daily life represents a new challenge to psychological resilience. Professionally and psychologically, as we found at higher age, doctors become resilient at such extent where even socio-economic and healthcare crisis like in pandemic could move them a little. Moreover, they were found less stressed with less burnout.

In an epidemiological cross-sectional study [4], Liu et al from China found that middle aged health staffs due to higher family burden and medical staffs working in high risk areas were found to experience higher psychological distress. In a cross-sectional study [12] in China, Que et al highlighted that psychological problems are pervasive

among healthcare workers during the COVID-19 pandemic. Receiving negative information and participating in front-line work appear to be important risk factors for psychological problems.

Fiorillo A and Gorwood P in the Editorial [13] of European Psychiatry discussed in details about the consequences of the COVID-19 pandemic on mental health and implications for clinical practice. They opined that even pandemic related containment measures can have a detrimental impact on mental health. It is very likely that when the pandemic is over, world may have a shortage of health professionals due to burnout and mental exhaustion. They raised another aspect of concern that -- Internet is spreading very rapidly a large amount of uncontrolled news; this information overload has been defined "infodemic," with the risk of fake news running faster than the virus itself, and creating uncertainties and worries.

In a study [14] on 304 healthcare staffs in Iran, Zhang et al found that a sizable portion reached the cut-offs of psychological distress; and less satisfied with job when there is uncertainty of detection of COVID-19. In a systematic review and meta-analysis [6], Pappa et al interpreted -- evidence suggests that a considerable proportion of HCWs experience mood and sleep disturbances during this outbreak, stressing the need to establish ways to mitigate mental health risks and adjust interventions under pandemic conditions.

In an online survey in India (n=152) [7], Chatterjee et al concluded that Doctors who were working during COVID pandemic have a high prevalence of psychiatric morbidity. Age and having multiple co-morbidities are significant predictive factors; similar also reflected in our observation.

Sultana et al [15] found that healthcare providers often experience occupational stress leading to burnout, which may be aggravated during COVID-19. Ornell et al [11] explained that due to the exponential increase in the demand for healthcare, professionals often face long work shifts even with few resources & precarious infrastructure, leading to burnout. Our study revealed contrasting analysis report of less burnout even in such struggling time.

In a nationwide observational study [16] in India, Wilson et al found that the prevalence rates of high-level stress, depressive symptoms requiring treatment, and anxiety symptoms requiring further evaluation were 3.7%, 11.4%, and 17.7%, respectively. Female gender and staying away from family were significant predictors. Similar results were echoed in our analysis where female doctors were found more emotionally disturbed.

CONCLUSION:

COVID-19 pandemic gave real challenge to the resilience of the healthcare professionals with little psychological impact. Emotionally and professionally doctors were mostly stable with less burnout even in such struggling period.

Limitation of the study:

Hesitation regarding disclosure of personal data; strategy taken to remove hesitation -- nowhere in study proforma faculty name had been mentioned and all participants were given assurance that faculty-list in alphabetical order would be deleted from our record after data collection process so that none could track participants.

Healthcare faculties are generally found less oriented with modern gadgets, busy in their work and few are even too reluctant to find time for online response; thus, direct interaction and offline data collection were preferred.

Relevance of the study:

Pandemic era has again proved that Doctors are still resilient even at such socio-economic crisis; but, addressing their psychological burden and arrangement of physical & mental support from community as well as organizational levels are utmost needed, especially when public health and existence of human race are concerned.

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