

Comparison of Psychological Impact of Covid-19 Pandemic among Frontline Healthcare Professionals in a Tertiary Care Hospital of North India

Gaurav Saxena¹, Megha Garg²

¹ MSc Experimental Psychology School of Psychological Science, University of Bristol, Bristol, United Kingdom

² MRes Health Sciences Research, Pharm D Faculty of Health Sciences, University of Bristol, Bristol, United Kingdom

Received: October 2020

Accepted: October 2020

ABSTRACT

Background: This study aims to assess the level of worry, psychological distress, perception regarding quality of information, and influence of these factors on the behaviour of Healthcare professionals (HCPs) during Covid-19 pandemic outbreak in India. **Methods:** Medics and nurses were distributed self-reporting questionnaires through paper and/or online mode. This included a survey developed to understand various aspects of worry in HCPs, quality of information received, and intended attitudes, along with a GHQ-28 for assessing psychological distress. **Results:** Moderate level of psychological distress was found in 28% of total respondents. Overall, 58% reported to be worried about Covid-19, with nurses worrying more than medics, mainly about the fear of infecting loved-ones. High level of satisfaction with the quality of information received about illness was noted with strong desire for additional information. Despite worrying, very few reported changes in their behaviour, however, psychological support was considered important by HCPs to deal with the stress. **Conclusion:** Covid-19 has resulted in high distress among HCPs. To manage this level of anxiety and prevent its long-term impact on wellbeing, psychological interventions should be inculcated in pandemic preparedness strategies.

Keywords: Covid-19, Health Personnel, Psychological Distress.

INTRODUCTION

The novel coronavirus or Covid-19 infection was declared as a pandemic by the World Health Organisation on 11th March 2020.^[1] As on 8th August 2020, the number of confirmed cases in India were 2,046,093 and 42,518 reported deaths.^[2] Even when the disease outbreak was believed to be between the “local” and “community” transmission phase, the government had set many stringent measures in place, like, imposing a nationwide lockdown, travel ban, rapid scaling of testing, and bulk purchase of ventilators and personal protective equipment. These measures along with the high level of disease transmission, reflected the government’s anticipation of a dramatic rise in the number of cases and intentions to gear up its healthcare infrastructure before it gets overwhelming.

During this time, the Healthcare Professionals (HCPs), mainly nurses and medics, are playing a key role in combatting this pandemic at the frontline.^[3] Previous research on the impact of disease outbreaks has given strong evidence of high level of psychological distress and emotional disturbance among HCPs.^[4] This can be due to factors such as increased pressure and expectations,^[5] high level of

direct exposure to the virus, lack of proper equipment and hospital infrastructure for their own protection and care of infected patients, stigma and discrimination,^[6] fear of being potential carrier of infection and infecting loved ones,^[7] and removal of the much needed “social buffer” to reduce stress, which is provided by friends and family, due to isolation and quarantine.^[8] These factors have also been observed to contribute to elevation of the level of anxiety, depression, sleep-related problems, increased anger and aggressiveness in HCPs dealing with the present pandemic, further interfering with their abilities to understand, critically appraise, and make quick and informed decisions.^[9]

While India is yet to reach its peak level of outbreak, a wider understanding of mental concerns of its primary fighters can help them and other countries to formulate and adopt strategies to mitigate the impact on HCPs efficiency, motivation and overall wellbeing in a long run. An extensive Medline search revealed limited literature regarding the evaluation and understanding of worries and concerns faced by frontline HCPs during current Covid-19 outbreak in North India.

The present study aims to compare causes and degree of worry, perception about the quality of information received related to the pandemic, amount of psychological distress, and the likely impact of these factors on the behaviour, attitude and motivation between nurses and medics in a tertiary care hospital with Covid-19 positive cases in Northern India.

Name & Address of Corresponding Author

Gaurav Saxena
MSc Experimental Psychology
School of Psychological Science,
University of Bristol,
Bristol, United Kingdom

MATERIALS AND METHODS

After obtaining Institutional Ethical Clearance and written informed consent from the participants, this prospective observational study was conducted in a level-3 Covid-19 isolation and treatment setup (comprising of 400 isolation beds and ICU facility for patients in critical condition), Teerthanker Mahaveer Hospital, India, from April to May 2020. The study site is a private multi-super speciality hospital in northern India, supporting a medical college, with recently designed level-3 setup to isolate and treat Covid-19 patients.

At the time of performing this study, India was between the “local” and “Community transmission” phase of Covid-19 pandemic, with approximately a total of 571 confirmed cases, and 93 reported death at the study site till the date of analysis. All HCPs (nurses and medics) dealing with management of Covid-19 patients was eligible to participate in this study. The study was conducted in accordance with the guidelines laid down by the Institutional Ethical Committee.

Procedure

Participation was anonymous and voluntary, and included the completion of two self-administered questionnaires along with providing some demographic details like age, gender, whether they had children, and if living alone. The study was processed in two modes: 1. an online version comprising of information sheet, consent form, and the two questionnaires, was developed on the platform, Qualtrics (<https://www.qualtrics.com/au/>), and was e-mailed to all medics in the hospital, 2. all nurses were provided with paper copies which they had to submit at designated collection points before the last date. Medics were sent an email and a flyer was circulated among nurses reminding them to complete the survey 2-days prior to the deadline. No second attempt to contact them was made after this. One of the authors prepared a consolidated data file for further analysis.

Measures: Construct of Questionnaires Used

The following two questionnaires were used to record all measurement outcomes:

1. General Health Questionnaire-28 (GHQ-28): This is a 28-item scaled-version of GHQ-60, which is used to assess anxiety, somatic symptoms, insomnia, severe depression, and social dysfunction. (<https://www.gi-assessment.co.uk/products/general-health-questionnaire-ghq/>) Participants were asked to report to the presence of psychological distress using this questionnaire. All reported items were scored on a 4-point Likert scale, which is used to measure psychological well-being and mental disturbances for people employed in a hospital setting. Previous studies have indicated that, a total

score of more than 11 on a 4-point Likert scale, captures severe level of psychological distress, whereas a score above 5 indicates psychological distress of mild-moderate level 7.

2. Worries and Attitude Questionnaire: Upon extensive literature review, no validated tool was found to measure HCPs level of worry, possible future response to the pandemic and satisfaction with provided information in the present context of Covid-19, thus a 10-item questionnaire was developed in consultation with clinical psychologists, who were actively engaged in monitoring the well-being of HCPs. The developed scale had a combination of dichotomous items (Yes/No) and items which had to be scored on a 9-point Likert scale (1= Very low/ Strongly disagree, 9= Very high/ Strongly agree), indicating their level of agreement or perception towards the statement.

Statistical Analysis

Data was analysed using SPSS (Version 24.0; SPSS Inc, Chicago, IL). Results were reported as mean \pm standard deviation (SD) and/or frequency and percentage, as appropriate. Student t-test and Chi-squared test or Fisher's exact test were used to analyse parametric (continuous) and non-parametric (categorical) data, respectively. A P-value of less than 0.05 was considered as statistically significant.

RESULTS

A total of 641 HCPs (response rate: 89.02%) consented to participate and returned both completed questionnaire in either digital or paper form.

Demographic characteristics and psychological distress during Covid-19 pandemic.

A total of 720 HCPs were invited to participate in the study, out of which 641 (Nurse=413, Medics=228) completed the survey. Their mean age was 34.8 ± 6.7 years, predominated by females (69.9 %). Most respondents had children (N=394), whereas just 27.3% of participants were found to live alone. A total of 178 HCPs reported to have psychological distress, out of which 22% were scaled at mild to moderate and rest (5.8%) at severe levels. [Table 1]

Perception about the quality of information received about the pandemic

Overall, both nurses and medics agreed to have been provided enough information about the pandemic from the hospital (Nurses= 5.2 ± 2.1 , Medics= 5.5 ± 2.5 , P-value=0.107). On the other hand, medics were found to be more informed about the symptoms, prognosis, available treatment, route of infection, and preventive measures related to the pandemic (P<0.001). [Table 2]

Both the groups were found to be moderately satisfied with the communications they received from the hospital; however, medics found the information to be clearer than nurses (P<0.001) and

expressed a preference for additional information (P<0.001). [Table 2]

Worries and concerns

In general, it was found that about 68.9% of nurses and 31.09% of medics reported worry related to the pandemic. [Table 3]

Both the groups had equally high-level concerns about the possible risk of getting infected (P=0.170). Consequently, nurses had moderate level of worry about a possible health consequence they may face (nurses= 5.0±1.5, medics= 3.7±1.6; P<0.001) and difficulty in getting treated, if infected (nurses= 4.6±1.8, medics= 3.9±1.8; P<0.001). Medics, on the other hand, reported low worry on these parameters. Medics expressed greater confidence in the preparedness of the hospital to deal with the pandemic, if the situation worsen (P<0.001). A moderately high need of psychological support was expressed by the nurses to deal with the stress related to the pandemic (nurses= 6.2±1.6, medics= 4.4±2.5; P<0.001). Moderate to high level of devotion towards work was noted among nurses and medics (5.5±2.4 and 6.8±1.1; respectively; P<0.001). [Table 3].

Most frequent reason, amongst those who reported that they are worried about the current pandemic, was the fear of transmitting disease to family and friends (nurses= 70.7%, medics= 71.5%; P-value= 0.867). This was followed by the perceived danger posed by disease itself (nurses= 63.4%, medics= 44.5%; P-value<0.001), then the apprehension of affecting personal and professional relationships (nurses= 49.3%, medics= 32.4%; P-value= 0.003), and finally being isolated (nurses= 32.3%, medics=

18.9%; P-value= 0.008). Overall, it was observed that these reasons could cause more worry in nurses than medics (p<0.05), except for the fear of transmission of disease, where no significant difference in effect between them was noted. [Table 3]

Intended changes in behaviour and degree of worry Out of all respondents, 372 reported that they are worried about the new Covid-19 pandemic, and thus limited their social interaction (12.18%), however, most of them continued to interact with their peers (87.8%). On the other hand, those who confirmed that they are not worried about the pandemic (N=269) did not stop socializing with friends and family (95.4%), excluding 14 respondents who were not worried but managed to stop social interaction. The P-value calculated using chi- square was found to be highly statically significant between worry and limitation of social interaction (P-value=0.003). [Table 4]

Table 1: Demographic characteristics and psychological distress during Covid-19 pandemic.

Demographics (N = 641)	
Age, [mean ± SD]	34.8 ± 6.7
Females, N (%)	448 (69.9%)
Children (if yes), N (%)	394 (61.5%)
Living alone, N (%)	175 (27.3%)
Profession, N (%)	
Nurses	414 (64.6%)
Medics	226 (35.3%)
Psychological Distress, N (%)	
Mild to Moderate	141 (22%)
Severe Psychological Distress	37 (5.8%)

SD = standard deviation, N = frequency.

Table 2: Sufficiency of Information for Healthcare professionals during Covid-19 pandemic

Nurses (N = 413)	Medics (N = 228)	p-value	
Received enough information about the pandemic from the hospital	5.2 ± 2.1	5.5 ± 2.5	0.107
Enough information about following aspects of Covid-19, [mean ± SD]:			
Symptoms	6.8 ± 1.3	7.4 ± 1.7	<0.001*
Prognosis	5.5 ± 0.4	6.3 ± 0.9	<0.001*
Available treatment	4.1 ± 1.0	4.9 ± 1.3	<0.001*
Route of infection	6.6 ± 1.3	7.1 ± 1.1	<0.001*
Prevention measures	5.9 ± 1.6	7.6 ± 1.2	<0.001*
Clarity of information	6.7 ± 1.2	7.1 ± 1.5	<0.001*
Need for additional information	3.4 ± 0.7	3.8 ± 1.1	<0.001*

HCPs = Health care professionals, SD = standard deviation, N = frequency. * Statistically significant difference between groups; (P < 0.05).

Table 3: Worries of Healthcare professionals during Covid-19 pandemic

	Nurses (N = 413)	Medics (N = 228)	p-value
Worry related to Covid-19 illness, (Yes; N, %)	256 (68.9)	116 (31.09)	0.006*
Perceived amount of worry, [mean ± SD]:			
Perception of being infected by Covid-19	6.1 ± 1.8	5.9 ± 1.7	0.170
Perception of severe health complication due to infection	5.0 ± 1.5	3.7 ± 1.6	<0.001*
Perceived difficulty in treatment	4.6 ± 1.8	3.9 ± 1.8	<0.001*
Confidence about hospital's preparedness to tackle Covid-19	4.0 ± 1.3	5.1 ± 2.1	<0.001*
Perceived importance of psychological support to help deal with stress	6.2 ± 1.6	4.4 ± 2.5	<0.001*
Devotion to work	5.5 ± 2.4	6.8 ± 1.1	<0.001*
Reasons to worry, N (%):			
Danger of disease	162 (63.4)	52 (44.5)	<0.001*
Spreading disease to loved ones	181 (70.7)	83 (71.5)	0.867
Isolation from loved ones	83 (32.3)	22 (18.9)	0.008*

Effect on relationships	126 (49.3)	38 (32.4)	0.003*
-------------------------	------------	-----------	--------

HCPs = Health care professionals, SD = standard deviation, N = frequency. * Statistically significant difference between groups; (P < 0.05).

Table 4: Changes in behaviour and degree of worry in Healthcare professionals during Covid-19 pandemic

	Do you worry about the new Covid-19 pandemic?			Degree of Worry	
	Yes (N = 372)	No (N = 269)	p-value	mean ± SD	p-value
Limited social interaction	Yes	45 (12.18%)	0.003*	6.8 ± 1.1	<0.001*
	No	327 (87.8%)		3.9 ± 2.4	
Isolation due to risk of infection	Yes	41 (10.9%)	0.016*	5.7 ± 1.8	<0.001*
	No	331 (89.07%)		3.6 ± 2.0	
Avoidance of work due to worry	Yes	23 (6.3%)	0.008*	6.3 ± 1.5	<0.001*
	No	349 (93.6%)		3.2 ± 1.2	

HCPs = Health care professionals, SD = standard deviation, N = frequency. * Statistically significant difference between groups; (P < 0.05).

A similar trend was observed for isolation due to risk of spreading infection and avoidance of work, with respect to presence of worry among HCPs. Irrespective of being worried or not, majority of HCPs did not isolate themselves or avoided work (P-value= 0.016 and 0.008; respectively). [Table 4] Mean degree of worry was found to be higher among HCPs who reported of limiting social interaction, isolating themselves due to risk of infection, and avoiding work (6.8+1.1, 5.7+1.8 and 6.3+1.5; respectively). Similarly, those who did not limit their social interaction, isolated or avoided work had a lower mean degree of worry of 3.9+2.4, 3.6+2.0, and 3.2+1.2; respectively. A statistically significant difference was found in the degree of worry among all three behaviours recorded (P<0.001). [Table 4]

DISCUSSION

On 31st December 2019, the health authorities of China, informed their country's WHO office about the emergence of a new pneumonia like disease, later identified to be caused due to a novel (2019-nCoV) coronavirus.^[10] Although initially the spread of Covid-19 was limited only to different parts of China, particularly in the city of Wuhan, it took only a couple of months to spread to other parts of the world like a forest fire. As of 8th August 2020, the number of confirmed cases globally had reached 19,187,943 and 716,075 deaths.^[11] A large and growing body of literature has investigated the psychological impact of disease outbreak on frontline HCPs. Bao et al,^[12] notes that the experience of trauma, fear and stress makes HCPs, who are primarily responsible for care of Covid-19 patients, susceptible to mental health problems such as depression, anxiety, and posttraumatic stress disorder. The risk of working in a dangerous environment, without sufficient protective equipment, fear of getting infected and infecting loved ones, anxiousness due to limited knowledge about the disease, lack of medical treatment, high reliance on non-pharmacological ways to prevent transmission and social disconnection are some reasons associated with stress among HCPs, consequently interfering with their abilities to work efficiently.^[4,13]

The present study is performed to assess and compare nurses' and medics' response to this pandemic, by evaluating their degree and causes of worry, perceived sufficiency of information about the illness and their level of psychological distress and, how these factors may contribute to bring about a behavioural, attitudinal and motivational change in them.

The link between psychological distress and its manifestation in HCPs has been well established by a considerable amount of research, conducted especially during previous outbreaks of disease epidemics.^[14-17] Consistent with this finding, using the General Health Questionnaire-28, the current study also notes the presence of at least mild level of psychological distress in a fourth of its population, with some even falling into the category of having 'severe' psychological distress. Greenberg et al,^[18] introduces 'moral injury' as a likely consequence of psychological distress among HCPs during Covid-19 pandemic. This can result in the development of negative thoughts and opinion about themselves and others along with 'feelings of guilt, shame or disgust'. A similar study by Tam et al,^[5] conducted during SARS outbreak in Hong Kong, also found 56.7% of HCP qualifying the threshold for psychiatric morbidity. They remarked that in a pandemic like situation, when there is an increased work-related stress and insufficient material and emotional support, this can contribute to elevating the level of psychological distress temporarily. Although, at this stage of pandemic in India, the interpretation of results of the present study, to derive a causal inference, must be made with caution. If left entirely unchecked, it can potentially trigger mental health consequences in the form of depressive symptoms, insomnia, burnout and PTSD in future.^[3]

This study also attempts to investigate the reasons and level of concern and worries in HCPs, and how they can influence their behaviours. Since no appropriate scale was available to capture the present study's objectives, a tool was developed after carefully reviewing the available literature. This revealed some similar tools that were used in earlier pandemics like SARS and A/H1N1.^[5,7,19] Various ideas were gathered, and the scale items were finalized in consultation with hospital's clinical psychology team, who were aware of the present

psychological state of HCPs. The Worries and Attitude Questionnaire underwent extensive scrutiny during the ethical approval process, and after the expert opinion of reviewers, suggested changes were made in the tool that led to the confirmation of face validity of the items and approval for use of the scale in this study.

HCPs are increasingly identifying themselves as a 'caregiver, victim and spreader'.^[17] The limited knowledge about Covid-19 illness and its treatment at this stage has not only posed a challenge to their professional efficacy due to heavy reliance on non-medical methods for prevention but frequent changes in infection containment protocols might inculcate a feeling of fear and uncertainty.^[20]

The present study shows that HCPs found the quality and quantity of information received from the hospital to be of moderate level of satisfaction. Both nurses and medics believe that they have enough information about the symptoms, transmission and prognosis of the illness but agreed to have relatively less knowledge about its treatment. These findings stem from the fact that at present, there is no proven treatment for the illness, and medical intervention is largely focused on controlling symptoms rather than attacking the virus itself. Both groups also express great awareness about preventive measures like frequent handwashing and avoidance of face touching etc.

The dissemination of information in hospital regarding any new development about the illness was through various modes like daily morning briefings, electronic communication through email and video-call meetings, mock-drills after the introduction of any new medical protocol and advertisement of the same on hospital's website, and regular follow-ups by immediate superiors. These factors led HCPs to consider the information received thus far, to be clear. One interesting finding to note is that perceived sufficiency of information and its supposed clarity is considered greater by medics than nurses in each of these aspects. The observed results can be due to the reason that medics have better access to sophisticated and detailed information about the disease and are also the first ones to know them. More specialised information may be directed towards medics because they are considered experts in the area and are primarily responsible for treatment, whereas nurses are considered responsible for care and adherence to the treatment prescribed by a medic.^[17] Because of the same reason, the preference for additional information about this illness is found to be higher among medics than nurses.

Clear and updated information can enable HCPs to undertake active coping strategies like planning and problem solving, managing the feelings of fear and uncertainty, undertaking most appropriate measures to ensure personal safety and safety of their friends and family.^[17,21] Moreover, a better understanding

can enhance confidence in their knowledge and abilities, thus enabling them to work efficiently.

However, despite being somewhat satisfied with the quality of received information, more than half study population reports to worry about the pandemic with the proportion of nurses worrying about the illness is found to be more than double than that of medics. This pattern has been observed because in any disease outbreak, nurses have more direct or indirect contact and exposure to an infected or a suspected case of illness, making them more likely to get infected.^[5] The fear of infecting friends and family is the most frequently reported reason and observed to be of equal intensity in both the groups. The disease is highly communicable, and an infected person can be asymptomatic but still a source of transmission for others. This contributes in the assessment of this disease as dangerous and further raises the amount of worry among HCPs. Additionally, most participants in the study has children and did not live alone. These factors can consequently increase their apprehension of being isolated from their family and close network, and further affecting their relationships with them.^[22]

Despite being hailed as heroes of the fight, HCP are often a victim of stigmatization and discrimination by people.^[22,23] Because of their proximity with high viral loads, they are believed to be a potential source of contamination, often making them targets of verbal and aggressive spats.^[5] Consistent with the findings of present study, Nickell et al,^[24] reported an increased fear of being discriminated and stigmatized among doctors, nurses and allied professionals during SARS outbreak in a hospital in Toronto. Recurrent instances of isolation and stigmatization was also reported by hospital staff in another Toronto based study during SARS outbreak.^[20]

HCPs are also facing a tremendous risk of catching the infection themselves. In February 2020, China reported that 3,387 HCP have been infected with Covid-19, among which 90% were from Hubei province.^[25] By the end of March, there were 12,252 confirmed cases of HCPs and over 105 deaths in Italy alone. These numbers show that HCPs are highly vulnerable to the risk of infection. Results of the present study also reflect a strong perception of being at risk of infection among both nurses and medics. Furthermore, nurses held the view that, in the long run, they may face complicated health related consequences if infected. This view is less prominent among medics.

Regardless of these concerns, medics expressed moderately high level of confidence in hospital's preparedness to fight this illness. This trust is found to be of moderate level among nurses, who are sceptical if the hospital has enough resources to handle in an event of sudden surge. This confidence can also be said to reflect in their high perceived sense of duty, especially among medics, who hardly

see themselves as avoiding coming to work due to the pandemic. Previous studies have reported similarly high level of commitment to work among HCPs.^[7,22] The observed devotion in HCPs could be attributed to, as Cheong et al. (2007) notes- having a “strong personal work ethic, a sense of personal responsibility for their patients’ welfare, and viewing not working as an abandonment of their responsibilities to their patients and colleagues”.^[19] However, this finding is contrary to some previous studies which have suggested that during a pandemic, the risk perception can make HCPs indulge in avoidance of work or even resigning.^[23,26] Some possible explanations for such outcomes can be lack of personal protective equipment, fear of infection, and lack of adequate information.^[27,28] Overall, on one hand, HCPs may be conflicted in choosing between prioritizing their family or work commitments, and on the other hand, they may be caught up in feelings of ‘altruism and professional responsibility’ and ‘fear and guilt’ of posing the risk of infection to their families.^[20] Only a small proportion of HCPs reports that, after the spread of pandemic, they have limited their social interaction and avoid meeting people. Similarly, even fewer HCPs have admits isolating themselves from their family as a precautionary measure to avoid the spread of disease. Additionally, said earlier, HCPs did not report to have avoided work despite their concerns about the pandemic. Among those who report to have engaged in these behaviours, their average degree of worry is found to be significantly higher than those who did not inform of any such changes in their behaviour. Considering these two outcomes together, it can be inferred that no apparent change was observed in behaviour among HCPs because their self-reported degree of worry was still low. These results are surprising as they go against the findings of several studies which have observed attitudinal changes during pandemic outbreaks.^[24,29] But this discrepancy can be attributed to the fact that India is yet to reach its peak stage of pandemic. It seems plausible that due to this reason, HCPs have not yet initiated the practice of social distancing with their family and close contacts but have adopted such measures at workplace or while meeting new people. The factors discussed above can cause large mental and emotional burden for HCPs. The raising expectations of public, government and media, scarcity of adequate medical equipment and infrastructure, shortage of healthcare staff to treat patients, an anticipation of an overwhelmed healthcare system and leading by examples of countries with most advanced healthcare arrangements struggle, has created psychological disturbance and initiated reevaluation of ones’ efficacy. At such a time, the urgency of psychological intervention becomes even more apparent to prevent mental health hazards that could

affect HCP’s wellbeing in a long run.^[12] The results of present study indicate that even HCPs consider psychological support at this point as highly important. This perception is noted more predominately in nurses than medics who held the view that the presence of expert support can help them cope with the existing pressure. This differential perceived importance could be because medical professionals are less likely to seek psychological support like counselling even when faced with extreme stress.^[5] Cultural influences can also make expressiveness relatively low among HCPs in India.

Limitations of the study:

The cross-sectional nature of the study relied primarily on data from self-reported questionnaires. This mode of data collection can be influenced by participant’s bias to respond in a way that conforms social norms and there is always a possibility of overestimation of risk by respondents. Also, the cross-sectional design makes it hard for making causal interpretation.

Implication of the study:

Taken together, the result of this study highlights the immediate need of psychological assistance for HCPs. Due too strict medical guidelines, the contact with an infected patient is limited only to HCPs. In such a situation, they not only have to overlook their physical health but also become their source of emotional support. These professionals are however, not trained in offering such empathetic support and especially in times like these, when they are themselves overburdened emotionally and physically, this added responsibility can be overwhelming. There may also be times when HCPs find themselves in unexpected circumstances where they are exposed to unanticipated trauma. This is most likely to cause a range of negative feelings and the best way by which HCPs can be helped manage them during this pandemic, is by providing them a fair and realistic assessment without any false reassurance of the on-going situation, making them aware of the possible moral dilemmas they may encounter in the future and how they can cope with these morally challenging decisions.^[18] As noted in the study, HCPs, especially medics are less likely to reach out for psychological support. So, a confidential set-up must be created to ensure a safe space for seeking help privately. Regular follow-ups should be done by team managers and HCPs must be made aware to look out for signs when they should reach out for help. Introducing frequent mindfulness sessions for HCPs can also be beneficial. Hospital authorities should, therefore, plan such interventional measures ahead of time before the situation gets even more stressful and start to affect their well-being.

Future directives in relation to this study

Most of the literature guiding the study is based on previous pandemics and disease outbreaks. This is because little investigation has been conducted yet in the backdrop of this pandemic making this as a foundation for future research, especially in India. This study was carried out when the number of Covid-19 positive cases in India was growing and was yet to reach its peak. Future studies can investigate the how this level of distress fluctuates over time. These can also help hospital administration, medical associations and policy makers take informed steps and ensure adequate mental health consideration while preparing for future pandemics.

CONCLUSION

This study has identified that HCPs experience moderate to high levels of worry and psychological distress about the present pandemic and this level is higher among nurses than medics. Despite considering the risk of transmitting infection to loved ones the greatest source of worry, only a few restricted their social interactions. Even fewer reported to avoid work and showcased high level of commitment to work. The study also concludes that HCPs, in general, perceived to possess enough information but at the same time also expressed a strong preference for additional information about the various aspects of pandemic. HCPs are moderately confident in the readiness of hospital and staff to deal with the pandemic if situation goes downhill but also believe that psychological support can be an added advantage to deal with stress in such a situation.

REFERENCES

1. World Health Organisation. WHO Director-General's opening remarks at the media briefing on COVID-19. 2020 <https://www.who.int/> Accessed 08 August 2020.
2. Ministry of Health and Family Welfare GoI. COVID-19 INDIA. <https://www.mohfw.gov.in/> Accessed 08 August 2020.
3. Burdorf A, Porru F, Rugulies R. The COVID-19 (Coronavirus) pandemic: consequences for occupational health. *Scand J Work Environ Health*. 2020; 46(3): 229-30. doi:10.5271/sjweh.3893
4. Brooks SK, Dunn R, Amlot R, Rubin GJ, Greenberg N. A Systematic, Thematic Review of Social and Occupational Factors Associated With Psychological Outcomes in Healthcare Employees During an Infectious Disease Outbreak. *J Occup Environ Med*. 2018; 60(3): 248-57. doi:10.1097/JOM.0000000000001235
5. Tam CW, Pang EP, Lam LC, Chiu HF. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: stress and psychological impact among frontline healthcare workers. *Psychological medicine*. 2004; 34(7): 1197-204.
6. Maunder RG, Lancee WJ, Rourke S, Hunter JJ, Goldbloom D, Balderson K, et al. Factors Associated With the Psychological Impact of Severe Acute Respiratory Syndrome on Nurses and Other Hospital Workers in Toronto. *Psychosomatic Medicine*.

2004; 66(6): 938-42. doi:10.1097/01.psy.0000145673.84698.18

7. Gouliou P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. *BMC infectious diseases*. 2010; 10(1): 322.
8. Maunder RG, Leszcz M, Savage D, Adam MA, Peladeau N, Romano D, et al. Applying the lessons of SARS to pandemic influenza. *Canadian Journal of Public Health*. 2008; 99(6): 486-8.
9. Kang L, Li Y, Hu S, Chen M, Yang C, Yang BX, et al. The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *The Lancet Psychiatry*. 2020; 7(3). doi:10.1016/s2215-0366(20)30047-x
10. Organisation WH. Situation Report-1. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>. Accessed 08 August 2020.
11. Organisation WH. Situation report-201. <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>. Accessed 08 August 2020.
12. Bao Y, Sun Y, Meng S, Shi J, Lu L. 2019-nCoV epidemic: address mental health care to empower society. *The Lancet*. 2020; 395(10224): e37-e8. doi:10.1016/s0140-6736(20)30309-3
13. Lee CCM, Thampi S, Lewin B, Lim TJD, Rippin B, Wong WH, et al. Battling COVID-19: critical care and peri-operative healthcare resource management strategies in a tertiary academic medical centre in Singapore. *Anaesthesia*. 2020. doi:10.1111/anae.15074
14. Albano L, Matuozzo A, Marinelli P, Di Giuseppe G. Knowledge, attitudes and behaviour of hospital health-care workers regarding influenza A/H1N1: a cross sectional survey. *BMC infectious diseases*. 2014; 14(1): 208.
15. Khalid I, Khalid TJ, Qabajah MR, Barnard AG, Qushmaq IA. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. *Clinical medicine & research*. 2016; 14(1): 7-14.
16. Lee SM, Kang WS, Cho AR, Kim T, Park JK. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Compr Psychiatry*. 2018; 87: 123-7. doi:10.1016/j.comppsy.2018.10.003
17. Wong TW, Yau JKY, Chan CLW, Kwong RSY, Ho SMY, Lau CC, et al. The psychological impact of severe acute respiratory syndrome outbreak on healthcare workers in emergency departments and how they cope. *European Journal of Emergency Medicine: Official Journal of the European Society for Emergency Medicine*. 2005; 12(1): 13-8. doi:10.1097/00063110-200502000-00005
18. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing mental health challenges faced by healthcare workers during covid-19 pandemic. *BMJ*. 2020; 368: m1211. doi:10.1136/bmj.m1211
19. Cheong SK, Wong TY, Lee HY, Fong YT, Tan BY, Koh GC, et al. Concerns and preparedness for an avian influenza pandemic: a comparison between community hospital and tertiary hospital healthcare workers. *Industrial Health*. 2007; 45(5): 653-61. doi:10.2486/indhealth.45.653
20. Maunder R, Hunter J, Vincent L, Bennett J, Peladeau N, Leszcz M, et al. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital. *CMAJ: Canadian Medical Association journal = journal de l'Association medicale canadienne*. 2003; 168(10): 1245-51.
21. Chan AO, Huak CY. Psychological impact of the 2003 severe acute respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. *Occupational Medicine*. 2004; 54(3): 190-6.
22. Johal SS. Psychosocial impacts of quarantine during disease outbreaks and interventions that may help to relieve strain. *The New Zealand Medical Journal*. 2009; 122(1296): 47-52.

23. Koh Y, Hegney DG, Drury V. Comprehensive systematic review of healthcare workers' perceptions of risk and use of coping strategies towards emerging respiratory infectious diseases. *International Journal of Evidence-Based Healthcare*. 2011; 9(4): 403-19. doi:10.1111/j.1744-1609.2011.00242.x
24. Nickell LA, Crighton EJ, Tracy CS, Al-Enazy H, Bolaji Y, Hanjrah S, et al. Psychosocial effects of SARS on hospital staff: survey of a large tertiary care institution. *Cmaj*. 2004; 170(5): 793-8.
25. Wang J, Zhou M, Liu F. Reasons for healthcare workers becoming infected with novel coronavirus disease 2019 (COVID-19) in China. *The Journal of Hospital Infection*. 2020.
26. Martinese F, Keijzers G, Grant S, Lind J. How would Australian hospital staff react to an avian influenza admission, or an influenza pandemic? *Emerg Med Australas*. 2009; 21(1): 12-24. doi:10.1111/j.1742-6723.2008.01143.x
27. Balicer RD, Omer SB, Barnett DJ, Everly GS, Jr. Local public health workers' perceptions toward responding to an influenza pandemic. *BMC Public Health*. 2006; 6: 99. doi:10.1186/1471-2458-6-99
28. Ko N-Y, Feng M-C, Chiu D-Y, Wu M-H, Feng J-Y, Pan S-M. Applying theory of planned behavior to predict nurses' intention and volunteering to care for SARS patients in southern Taiwan. *The Kaohsiung Journal of Medical Sciences*. 2004; 20(8): 389-98. doi:10.1016/S1607-551X(09)70175-5
29. Ehrenstein BP, Hanses F, Salzberger B. Influenza pandemic and professional duty: family or patients first? A survey of hospital employees. *BMC Public Health*. 2006; 6: 311. doi:10.1186/1471-2458-6-311

Copyright: © the author(s), 2020. It is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), which permits authors to retain ownership of the copyright for their content, and allow anyone to download, reuse, reprint, modify, distribute and/or copy the content as long as the original authors and source are cited.

How to cite this article: Garg M, Saxena G. Comparison of Psychological Impact of Covid-19 Pandemic among Frontline Healthcare Professionals in a Tertiary Care Hospital of North India. *Ann. Int. Med. Den. Res*. 2020; 6(6):MC01-MC08.

Source of Support: Nil, **Conflict of Interest:** None declared