

## Psychological Impact of Working in a COVID-19 Treatment Facility on the Mental Well Being of Health Care Workers

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### Abstract

The health care infrastructure has witnessed new norms and protocols which evolved rapidly during the COVID-19 pandemic, adding confusion in the minds of one and all. Working for the sick COVID-19 patients in the middle of the raging pandemic can have long lasting and deep mental health issues among the health care workers. If not timely addressed, it can have repercussions on the quality of patient care. A cross-sectional study was conducted through online Google survey forms on the health care workers deputed to different COVID-19 hospitals and COVID Care centers in Odisha, India. The study group included doctors, nurses, pharmacists, paramedical staffs and others. A link to the form was sent through the different Whatsapp groups. The questionnaire included questions on socio-demographic characteristics, knowledge about the COVID-19 pandemic and information on self-perceived psychological distress concerning the pandemic. 97.5% of the participants confirmed COVID-19 related anxiety. 41.8% slept lesser than usual. 61.1% intended to seek psychosocial support. 70.6% experienced fear about their health. 89.1% had fear of passing on infection to their loved ones. 49.3% had to deal with work frustration. Younger age and lesser years of work experience were factors for decreased work satisfaction. This study highlights the mental health status of health care workers during the COVID-19 pandemic. We need to identify vulnerable subsets among them and allay their anxieties and implement effective measures in order to keep the quality of patient care uncompromised in similar future scenarios.

**Keywords:** COVID-19 pandemic, Health Care Workers, Mental Health, Psychological impact.

### Introduction

COVID-19 was declared a pandemic by WHO (World Health Organization) on 11 March 2020 (1-3). Ever since then restrictions, lockdowns, new rules and guidelines were put in place, which were unheard of before. This had led to various maladjustments in everyone's daily lives. The health infrastructure witnessed changes in its treatment protocols for patients. Health care professionals were facing new challenges and were constantly updating themselves with new guidelines and policies regarding the treatment of COVID-19 patients and non-COVID patients (4, 5). This gave rise to surmounting anxieties during the COVID-19 pandemic. Health care workers have always been the victim of preexisting mental health issues and this problem

could be magnified during a ruthless pandemic situation (6). They are not only prone to suffer from mental health issues during the pandemic, but also from its aftershocks (7, 8). This can have major effects on their efficiency in patient care (9). The mental health status of the health care workers is often brushed under the carpet during the pandemics, in spite of the knowledge of its consequences (10). Evidences support that frontline workers involved in the diagnosis, treatment and follow-up of infected patients are at substantial risk of suffering from mental ailments (11, 12). Previously reported studies during Severe Acute Respiratory Syndrome (SARS) outbreak in 2003, have also shown adverse psychological outcomes

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among health care workers (13, 14). Thus, performing psychological assessment and providing support can go a long way in alleviating the mental pressure on the health care workers (15).

## Materials and Methods

A cross-sectional study was conducted through self-administered online Google survey forms for a period of one month from 1 June 2021 to 30 June 2021. During this time, India was reeling under the fury of the second wave of the COVID-19 pandemic. The study was conducted on the health care workers who were deputed to the different COVID-19 hospitals and COVID Care centers all over the state of Odisha, from their respective parent hospitals. Candidates who were deputed at that time were identified from their respective parent hospital databases. The study participants included doctors, nurses, laboratory technicians, pharmacists, paramedical staffs and the house keeping staffs in these COVID-19 hospitals and COVID Care centers.

The survey questionnaire was adopted from pre-validated questionnaires in previous studies on mental health status of health care workers during COVID-19 pandemic (16). A link of the online self-administered questionnaire consisting of closed-ended questions was sent to them through Whatsapp groups. Each institution had their own official Whatsapp group for smooth communication among themselves. The Whatsapp groups of the institutions included the health care workers deputed and serving in their respective COVID-19 hospitals or COVID Care centers in that particular time frame. The respondents' emails were matched against the email database of the candidates to prevent duplication of the responses.

The self-administered questionnaire included closed-ended questions about socio-demographic characteristics, exposure to COVID-19, knowledge about the pandemic and information on self-perceived psychological distress. The participants were informed about the title of the study, aims and objectives, privacy policy and were provided with the principal investigator's email address and phone number at the starting of the form. They then gave their consent by reading a declaration form and selecting a check box, before proceeding to fill up the answers to the questions.

Universal sampling technique was adopted and a total of 201 complete response forms were recorded. These were automatically tabulated in an Excel spreadsheet. All the parameters were analyzed using the Statistical Package for the Social Sciences version 25 software. The Chi-square test was used to check variations between the subcategories of the variables. P value less than 0.05 was considered significant.

## Results

Table 1 shows socio-demographic parameters and the responses received from the health care workers. 131 (65.2%) participants were females and 70 (34.8%) were males. 188 (93.5%) participants were from urban areas and 13 (6.5%) were from rural areas. 173 (86.1%) health care workers were working in private sector, 26 (12.9%) in government sector and 2 (1%) were self-employed.

### Interpretation of responses to the survey questions

#### 1) Anxiety, sleep disturbances, exhaustion and intent to seek psycho-social support:

Table 1 shows that 196 (97.5%) participants confirmed verifying the COVID-19 related information and out of them, 121 (60.2%) participants checked it frequently upto 5 times a day. Only 42 (20.9%) participants did not feel impatient during the pandemic. 84 (41.8%) participants had less sleep than usual and 42 (20.9%) participants needed more sleep than usual.

Table 2 shows the relation between the intent to take psycho-social support with respect to changes in sleep pattern and gender. 77 (61.1%) participants with changed sleep pattern had intention to seek psycho-social support. Among those whose sleep pattern remained unchanged, 30 (40%) participants had intention to seek psycho-social support. There is strong association between change in sleep pattern and intent to seek psycho-social support (P-Value <0.05). Thus, a total of 107 (53.2%) participants mentioned taking up psycho-social support if provided. On considering the relation between gender and the intent to seek psycho-social support, 79 (60.3%) female participants and 28 (40%) male participants had the intention to seek psycho-social support. There was a significant association between

**Table 1:** Socio-demographic characteristics and interpretation of the responses received from the health care workers

Variable	Frequency	percent	Cumulative percent
<b>1)Gender</b>			
Female	131	65.2	65.2
Male	70	34.8	100.0
<b>2)Location of work</b>			
Rural	13	6.5	6.5
Urban	188	93.5	100.0
<b>3)Job sector</b>			
Government	26	12.9	12.9
Private	173	86.1	99.0
Self Employed	2	1.0	100.0
<b>4)Verification of COVID-19 related information</b>			
No	5	2.5	2.5
Yes	196	97.5	100.0
<b>5)Frequency of checking COVID-19 related information</b>			
1 to 5	121	60.2	60.2
6 to 10	14	7.0	67.2
More than 10	10	5.0	72.1
Not checking	56	27.8	100.0
<b>6)Patience is tested more often now</b>			
No	42	20.9	20.9
Yes	159	79.1	100.0
<b>7)Change in sleep pattern</b>			
Lesser than usual	84	41.8	41.8
More than usual	42	20.9	62.7
Unchanged	75	37.3	100.0
<b>8)Consider seeking psychosocial support if the option will be available</b>			
No	48	23.9	23.9
Not Sure	46	22.9	46.8
Yes	107	53.2	100.0
<b>9)Break from regular work</b>			
No	123	61.2	61.2
Yes	78	38.8	100.0
<b>10)Regular contact with friends/ family</b>			
No	41	20.4	20.4
Yes	160	79.6	100.0
<b>11) Enough energy and patience for interactions with family</b>			
No	83	41.3	41.3
Yes	118	58.7	100.0
<b>12)Satisfied with working hours</b>			
No	84	41.8	41.8
Yes	117	58.2	100.0
<b>13)Work frustration</b>			
No	102	50.7	50.7
Yes	99	49.3	100.0
<b>14)Experience excessive fear /anxiety /worry about own health</b>			
No	59	29.4	29.4
Yes	142	70.6	100.0
<b>15)An intense fear of contracting the infection</b>			
No	87	43.3	43.3
Yes	114	56.7	100.0
<b>16)Fear of death while working in this pandemic</b>			

No	87	43.3	43.3
Yes	114	56.7	100.0
<b>17) Fear of loved ones contracting infection because of your work</b>			
No	22	10.9	10.9
Yes	179	89.1	100.0
<b>18) Feel depressed after reading watching the news</b>			
No	55	27.4	27.4
Yes	146	72.6	100.0
<b>19) Lockdown has added to your stress</b>			
No	67	33.3	33.3
Yes	134	66.7	100.0
<b>20) Religious or spiritual practices have changed</b>			
No	120	59.7	59.7
Not Sure	21	10.4	70.1
Yes	60	29.9	100.0
<b>21) Felt hesitation to work</b>			
No	105	52.2	52.2
Yes	96	47.8	100.0
<b>22) Feel protected by the hospital /institution you are working</b>			
No	112	55.7	55.7
Yes	89	44.3	100.0
<b>23) Feel accepted /welcomed by the society because of your work</b>			
No	78	38.8	38.8
Yes	123	61.2	100.0

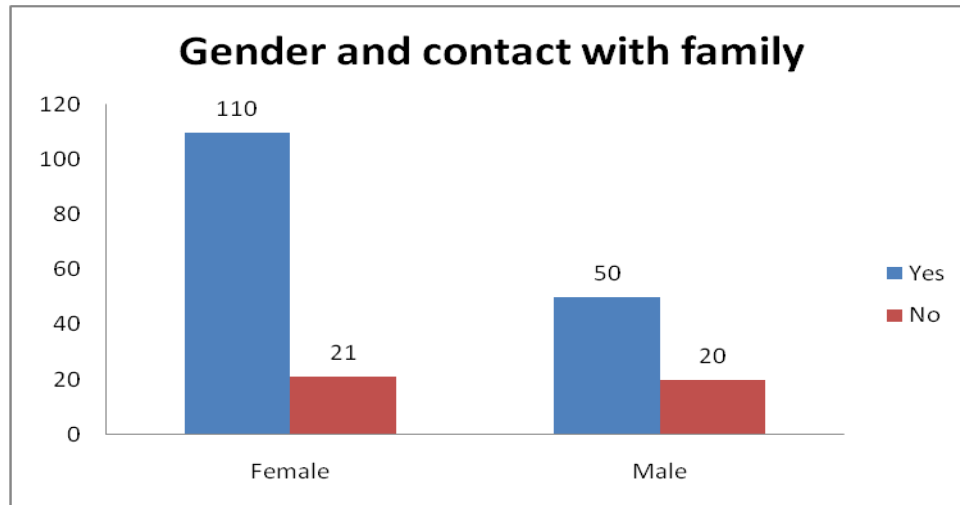
**Table 2:** Intent to take psycho-social support with respect to changes in sleep pattern and gender

	No intent to take psychosocial support	Not sure	Intend to take psychosocial support	Total	P value
<b>1. SLEEP PATTERN</b>					
<b>Changed</b>	24 (19%)	25 (19.8%)	77 (61.1%)	126 (100%)	<b>0.014</b>
<b>Unchanged</b>	24(32%)	21(28%)	30(40%)	75(100%)	
<b>Total</b>	48(23.9%)	46(22.9%)	107(53.2%)	201(100%)	
<b>2. GENDER</b>					
<b>Female</b>	28 (21.4%)	24 (18.3%)	79 (60.3%)	131(100%)	<b>0.019</b>
<b>Male</b>	20 (28.6%)	22 (31.4%)	28 (40%)	70(100%)	
<b>Total</b>	48(23.9%)	46(22.9%)	107(53.2%)	201(100%)	

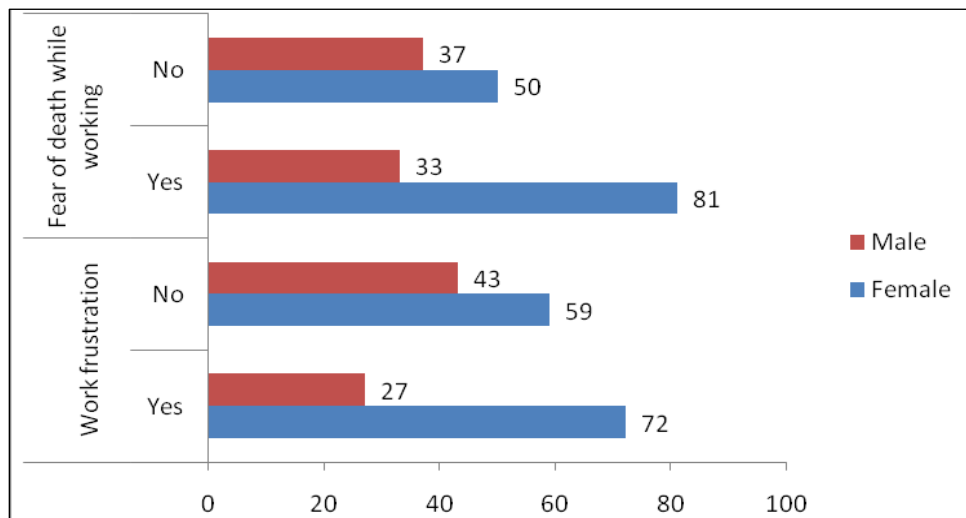
gender and the intention to seek psycho-social support (P-Value< 0.05).

**2) Work schedule and family life during the pandemic:** Table 1 shows 123 (61.2%) health care

workers did not have a break from work. 160 (79.6%) participants had regular contact with their families. 118 (58.7%) participants had enough energy and patience to communicate with their families after their duty hours.



**Figure 1:** Association of gender with the tendency to keep in touch with family



**Figure 2:** Gender with respect to fear of death while working and work frustration

Figure 1 shows the relationship between gender and the tendency of keeping in touch with family. Out of the total female participants 110 (84%) had regular contact with their families and 50 (71.4%) male. Figure 2 shows that out of the 99 participants facing work frustration, 72 (72.7%) were female health care workers.

Table 3 shows the role of different parameters in the perception of work satisfaction. 109 (62.6%) participants below the age of 30 years perceived their work as satisfying. Similarly, 18 (66.7%) participants above the age of 30 years perceived work satisfaction. When considering the gender, 21 (30%) males and 53 (40.5%) females did not perceive their work as satisfying. 11 (84.6%) participants from rural areas and 116 (61.7%)

participants had contact with their families. Table 1 shows 117 (58.2%) participants were satisfied with their working hours. 99 (49.3%) participants had to deal with work frustration.

participants from urban areas perceived work satisfaction.

**3) Anxiety about health of self and family members:**

Table 1 shows 142 (70.6%) participants experienced extreme anxiety about their health and 114 (56.7%) participants had an intense fear of contracting the infection. 114 (56.7%) participants had the fear of death while working in the pandemic. 179 (89.1%) health care workers had a constant fear of their loved ones contracting the infection from them due to the nature of their job.

**Table 3:** Different parameters influencing the perception of work satisfaction

Parameters	Perception of work as satisfying		Total
	No	Yes	
Age below 30 years	65 (37.4%)	109 (62.6%)	174 (100%)
Age above 30 years	9 (33.3%)	18 (66.7%)	27 (100%)
Male	21 (30%)	49 (70%)	70 (100%)
Female	53 (40.5%)	78 (59.5%)	131 (100%)
Rural	2 (15.4%)	11 (84.6%)	13 (100%)
Urban	72 (38.3%)	116 (61.7%)	188 (100%)

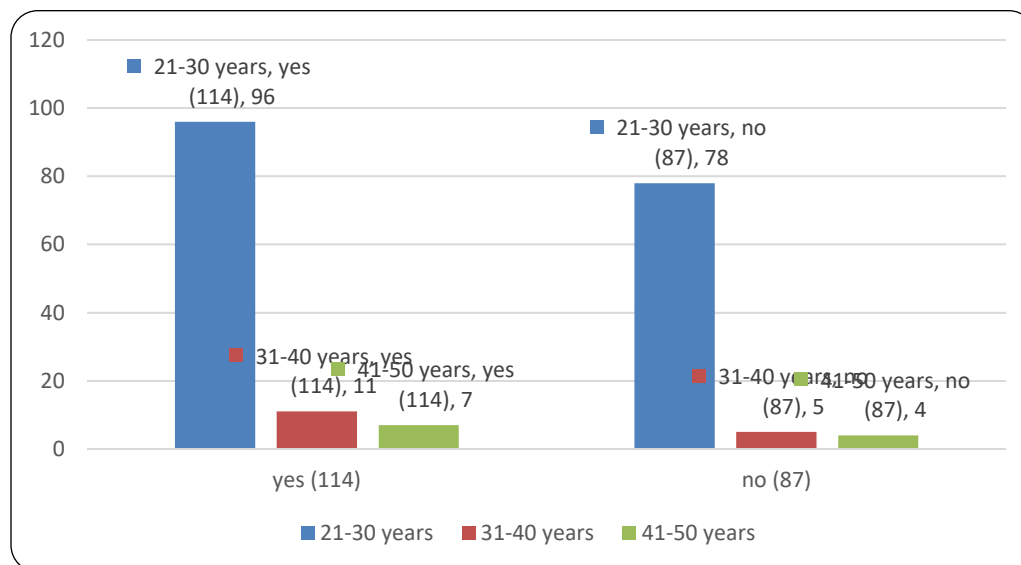
**Figure 3:** Fear of Death with respect to age

Figure 3 shows the fear of death among the health care workers in relation to their age. Of the 114 participants who had the fear of death, 96 (84.2%) were in the age group of 21-30 years. Figure 2 shows the relation of gender with the fear of death. Out of the 131 female participants, 81 (61.8%) had a fear of death while working whereas 33 (47.1%) males possessed such a fear.

#### 4) Social factors responsible for work hesitancy

Table 1 shows 146 (72.6%) health care workers felt depressed by watching the news and 134 (66.7%) participants have acknowledged lockdown as an additional stress factor for themselves and their families. 60 (29.9%) health care workers reported a change in their religious practices whereas there was no change for 120 (59.7%) participants. 96 (47.8%) health care workers felt hesitant to work in the prevailing situation. 112 (55.7%) health care workers did not feel protected by the hospital where they were working. 123 (61.2%) participants felt

accepted by the society because of their work, whereas 78 (38.8%) participants faced social stigma.

## Discussion

The health care system was dealing with new challenges every single day due to successive waves of COVID-19 pandemic. Our study shows that 131 (65.2%) health care workers were females, employed in urban areas in private sector. This might be due to many females engaged in the nursing division, constituting a major bulk of the health care lattice. This is supported by WHO, which states that globally, women are employed in the bulk of lower rank jobs in the health care infrastructure (17). A significant percentage of health care workers in our study suffered from anxiety disorders which was evident from the finding of 196 (97.5%) participants admitting to verifying COVID-19 related information frequently. This is comparable to the findings of British Medical Association survey who found that

45% of doctors in United Kingdom were suffering from mental health issues, which were escalated by COVID-19 pandemic (18).

Changes in sleep patterns, which could be due to increased duty hours or anxiety due to the new nature of the work was reported in 84 (41.8%) health care workers in our study. Lai *et al.*, reported that a noticeable proportion of health care workers suffered from sleep disturbances and insomnia during the pandemic and they found the incidence of insomnia to be 34% (11, 19).

In our study, majority of women health care workers who had disturbed sleep had the intent to seek psycho-social support similar to the findings of studies conducted by Lai *et al.*, Kang *et al.*, and Wang *et al.*, (11, 12, 20). They stated that many health care workers suffered from anxiety, depression and insomnia due to the nature of their work which demanded a close contact with cases of COVID -19 positive patients.

A significant majority of 123 (61.2%) health care workers in our study reported no break from their work. This could be due to overburdened hospitals and increased duty rosters for the care of COVID-19 patients. Luceno-Moreno *et al.*, and Barello *et al.*, proposed that long working hours contribute to psychological stress and physical symptoms among health care workers (21, 22).

Communication with near and dear ones can help relieve stress during the testing times. 160 (79.6%) health care workers in our study, mostly women, had managed to keep in regular touch with their families through phone calls or video chats and 118 (58.7%) health care workers found enough energy and patience for interactions with their families after their duty hours. Heath *et al.*, suggest that health care professionals who have good personal and professional relationships are at a lower risk of emotional burnout (23).

In our study, 21 (30%) male health care workers and 53 (40.5%) female health care workers did not have work satisfaction. This finding is supported by the studies of Lai *et al.*, and Zhang *et al.*, who found that female health care workers were more stressed at work (11, 24). This could be attributed to the sudden change in the nature of their work, redeployment to riskier nature of jobs during the pandemic, which could render them incapable at times to deal with

new circumstances. Females also have to manage their household duties and take responsibility of their young children in addition to their hospital duties, and staying away from their families could take a toll on their mental peace. This is supported by Heath *et al.*, who stated that when work responsibilities interfere with home lives, it causes emotional stress and burnout among health care professionals (23). In contrast, Abo-Ali *et al.*, found no significant relation between mental welfare and gender of health care workers (25).

109 (62.6%) health care workers below age of 30 years perceived their work as satisfying and 18 (66.7%) health care workers above 30 years of age perceived work satisfaction. Rahman *et al.*, also reported decreased mental wellbeing in younger physicians (26). In contrary to our findings, Badahdah *et al.*, and Alnazly *et al.*, suggested higher levels of psychological stress in health care workers above 40 years of age (27, 28).

11 (84.6%) rural area health care workers were satisfied with their jobs as compared to 116 (61.7%) urban area health care workers. This can mainly be due to the increased work pressure and increased referral patient load in the urban referral hospitals, which cater to more critically sick patients, whereas the rural area health care workers primarily deal with less sick and less symptomatic patients.

Although the health care workers provided unflinching service to the COVID-19 patients, they had deep concerns about themselves and their family members. 142 (70.6%) health care workers in our study had excessive anxiety about their health, similar to the findings of Ahmed *et al.*, and Chung *et al.*, (29, 30). Majority of health care workers in our study had concerns about their near and dear ones contracting the disease from them, which was also similarly highlighted by the studies of Cao *et al.*, and Urooj *et al.*, (31, 32).

The detailed and repeated telecasts in various media platforms regarding the woes of the people in the pandemic, added to the frustration of the health care workers. 146 (72.6%) of them have admitted to have felt depressed after watching the news, casting a gloomy shadow over the pandemic scenario. The ill effect of the "All are at risk" approach of the media on the mental status of health care professionals is supported by the findings of De Kock *et al.*, (33).



During lockdown, health care workers had no extra edge over other people, but were repeatedly at a higher risk of infection. Thus, 134 (66.7%) of them have acknowledged lockdown as an additional stress factor for themselves and their families.

Religious and spiritual practices had been affected in almost all the people during the lockdown, due to the closure of all places of worship. Fortunately 120 (59.7%) health care workers in our study had clung on to their faith and had reported no change in their daily religious practices. Perhaps due to this stake of faith, the hesitation to work in the pandemic was less and 105 (52.2%) were enthusiastic enough to work without any hesitation. The relation between spirituality and a positive work environment was also endorsed by Spinale *et al.*, and Ivtzan *et al.*, (34, 35).

89 (44.3%) health care workers in our study felt protected by their institution where they were working, in terms of duty hours, supply of protective gears, treatment in the event of getting infected with COVID-19, job security etc. Adams *et al.*, found that supporting the health care professionals during the testing times was of paramount importance in order to continue the combat against COVID-19 (36). Majority of health care workers in our study had felt accepted and welcomed by the society in return for the services rendered by them. This had further motivated them to work for the society in the time of need. Similarly, Alnazly *et al.*, also stated that health care workers in their study had received high levels of social support (28). Community support as a protective factor for the mental health of the health care workers was also emphasized in the studies of Xiao *et al.*, Sun *et al.*, and Yin *et al.*, (19, 37, 38). But astonishingly, Khanal *et al.*, revealed that a sizeable proportion of the health care workers in Nepal, faced social stigma related to COVID-19 (39). This has significantly affected the mental wellbeing of the health care workers in the country. Similarly Ramaci *et al.*, found that health care workers who faced stigma during COVID-19 faced more exhaustion, burnout and mental stress (40).

## Conclusion

This study highlights the vulnerable subsets of the health care workers who are prone to crumble under mental pressure during pandemic like scenarios in

future. This study finds female health care workers, young age and less years of work experience as factors for decreased work satisfaction and mental breakdown in a pandemic like scenario in future. With these results and interpretations, we can implement some simple measures to unburden the health care workers.

- Regular psychological assessment, identification, counseling and monitoring of vulnerable groups.
- Short duty rosters, minimizing exposure time to the infected patients, minimizing the PPE time.
- Facilities for proper isolation and treatment, in case of being infected.
- Acknowledgement of their efforts by means of awards, incentives and conducting regular online and offline meetings to motivate them in the fight against the pandemic.
- Taking their feedback to improve their working environment.
- Identifying sources of anxiety and allaying their fears through circulation of educational videos and materials.
- Redeployment of health care personals to a more suited job profile and redistribution between areas of high demand and low demand.
- Implementation of Telemedicine consultation for patients not requiring physical consultation.

## Limitations of the Study

Many health care workers, who were not familiar with technology usage and were not accustomed to using various social media platforms, were not adequately represented in the study.

## Abbreviations

Nil

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## Contribution of Authors

Dr Shristy Mohanty, Dr Kavya G Sudha and Dr Dattatreya Kar: Data collection and drafting of the article; Dr Kavya G Sudha and Dr K Shruthi Lekha:



Interpretation of data; Dr Tanushree Sandipta Rath, Dr Sujata Pendyala and Dr P Rajakumari: Concept and design and final approval of the version to be published.

### Conflict of Interest

The Authors declare that there is no conflict of interest among them.

### Ethical Approval

The study has been approved by Intuitional Ethical Committee.

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