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Impact of the Covid-19 Pandemic on the Mental Health and Lifestyle of Health Care Workers in Southern India

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ABSTRACT

Introduction: The Covid-19, just like any other Pandemic has been an extremely difficult time for people all over the world; however it has been the most challenging time for the frontline staff such as health care workers. It has not just led to changes in their work environment, but has also affected their lifestyle and mental health.

Objective: We conducted this survey to analyse the impact of the covid-19 pandemic on the lifestyle and mental health of health care workers.

Methodology: A cross-sectional study was conducted with the help of a questionnaire. A questionnaire was created and circulated via social media to various health care professionals. Response from participants was analysed using SPSS 16 version software and MS excel sheet.

Result: The survey reported the impact on physical and mental health. It was studied that most health care Professionals, especially the ones working in a covid environment, experienced sleep disturbances, diet and weight change, change in the level of physical activity, bowel disturbances, smoking and alcohol habit changes, mood swings, anxiety, fear, inability to concentrate, fatigue/burnout from work.

Conclusion: These changes affecting the lives of health care workers should be addressed as they can have permanent effects. Mental and physical health of medical professionals is essential, and attention should be extended to help them cope with their difficulties.

Key words: Covid-19, pandemic, lifestyle changes, mental health, health care professionals

INTRODUCTION

Covid 19 or the corona virus disease is an ongoing worldwide infection that has affected the health of a large portion of the population and has a psychological impact on most people. It is currently the leading cause of infection. Covid-19 is caused by severe acute respiratory syndrome – corona virus 2 (SARS-COV 2).[1] It is a respiratory tract infection, and its nature ranges from being completely asymptomatic to severe respiratory infection or even failure leading to death. [2] It is known that the corona virus has high mortality and morbidity. There are nearly 42 million cases all across the world to date. It was first identified in Wuhan, a city in China in November 2019.[3] Its outbreak was declared by the WHO, in Jan 2020. It was further declared as a pandemic in March 2020. [4]

Pandemics have always been an essential part of human history affecting mankind. They not just affect the physical health of a person, but also have a

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negative impact on the lifestyle and mental health of people. The influenza outbreak in 2009, SARS pandemic in 2003 and MERS pandemic in 2012 are examples of pandemics that created chaos in the whole world.[5] Studies have shown that these pandemics in the past have affected the mental health of people massively, and it affected the health care workers more than the others.[6] Similarly, in this study we aim to determine the effect of covid-19 pandemic on the mental health and lifestyle of health care workers. Psychical and psychological pressure on health care workers is the most under-addressed and unrecognised aspect of health care.[6] Not only doctors working in covid wards, but doctors in very field of medicine nurses, ward staff, surgeons and technicians are all equally affected, as there is a huge demand for them.[7]

Health care workers may experience this pressure due to sudden increase in workload during a pandemic, increased duty hours, staying away from family and reducing social meetings, isolation, fear of contagion for them and their friend and family, rapidly increase in change of protocols for treating patients, supporting sick colleagues, physical pressure due to the PPE.[5,6] The impact of isolation and sudden change in routine and lifestyle can be extremely exhausting mentally. Health care workers must be provided with psychological first aid and counselling to help them cope with their duties. Failure to do so can have a negative impact on their behaviour leading to sleep disturbances, anxiety, fear, depression, mood swings, irritability, addiction, substance abuse, panic attacks and can also affect their lifestyle by causing diet changes, lack of physical activity and fluctuation in their weight.[7]

OBJECTIVE

The aim of this cross-sectional study is to determine if the covid-19 pandemic has influenced the lives of health care workers by affecting their mental health and causing changes in their lifestyle.

We also tried to find an association between the mental and physical health of health care workers during the lockdown.

SUBJECTS AND METHOD

The study was approved by the head of the ethics committee at our hospital. A cross-sectional descriptive study was conducted with the help of a survey.

The survey was Pilot tested initially with a group of 25 doctors, who were not included in this study. The questionnaire was modified based on their responses and comments. The questionnaire was validated by a Psychiatrist, who is an expert in this field. The questionnaire was then circulated with the help of social media platforms. The survey was taken up by health care workers of age group 18 and above, from various hospitals in southern India. The questionnaire was conducted in English. The survey was conducted in the months of August and September 2020. A target sample size of 310 was set. The sample size calculation for the prevalence study was done using the formula: Sample size = $4pq/d^2$ [prevalence p=50%, q=50% (q=1-p), d=absolute precision=6%]. A total of 315 responses from doctors and nurses were collected.15responses was omitted since they were incomplete. A total of 300 responses were thus recorded.

The survey was conducted to determine if covid-19 pandemic had an impact on the lifestyle and mental health of Heath care workers. Factors such as diet changes, changes in the level of physical activity, weight changes, sleep disturbances, bowel disturbances, substance abuse, smoking and alcohol habits, fear, anxiety, stress, mood swings, inability to concentrate, covid duty hours and off, fatigue/ exhaustion due to donning of PPE, quarantine and time away from family and friends were studied and analysed. Data was collected and fed into an excel sheet and was statistically analysed using SPSS 16 version. Descriptive analysis to determine the frequency and percentage of population was done. Chi-square test was used to determine the association between two variables. The identity of the participants was kept anonymous.

RESULTS

The survey was taken up by all kinds of Heath care workers including interns, postgraduate students, junior residents, consultants, nurses, technicians, ward staff but the majority are the junior doctors, post graduate students and nurses. The descriptive analysis results of the survey are summarised in table 1.

The diet pattern, meal frequency, mid night binge, bowel disturbances, weight changes, sleep cycle and sleep disturbances, smoking habits, alcohol consumption habits of 300 health care providers was assessed. We found that most health care workers experienced changes in their lifestyle, the findings are summarised in the tables below. By the chi square test, we found an association between between alcohol consumption and alcohol consumption changes post covid-19 pandemic (p value 0.000 [$p<0.05$]) and an association between no. of hours of sleep and sleep changes post the covid-19 pandemic (p value 0.000 [$p<0.05$])

Many health care workers had trouble concentrating, mood swings, fatigue at work due to wearing PPE for long hours, panic attacks and fear of contracting the disease. Social isolation from their family and friends also played an important part in further decline of their mental health. We found an association between social isolation and weight change [p value 0.008 [$p<0.05$]], midnight binge [p value 0.039 [$p<0.05$]], inability to concentrate [p value 0.023 [$p<0.05$]], panic attacks [p value 0.000 [$p<0.05$]], fear of getting the infection [P Value 0.006 [$p<0.05$]].

Table 1: Summary of the frequency and percentage of the participant's responses

Variable	Frequency (%)	Variable	Frequency (%)
Age		**Social Isolation**	
18-30 Years	228 (76)	<1 Month	116 (38.7)
30-50 Years	63 (21)	1-3 Months	75 (25)
>50 Years	9 (3)	>3 Months	109 (36.3)
Gender		**Panic Attack**	
Female	164 (54.7)	No	215 (71.7)
Male	135 (45)	Yes - But Haven't Gotten Help	47 (15.7)
Other	1 (0.3)	Yes - Gotten Help	38 (12.7)
Covid Duty		**Alternate Relaxing Method**	
Yes	269 (89.7)	Yes	96 (32)
No	31 (10.3)	No	204 (68)
Weight Change		**Fear Of Getting Coid**	
No Change	112 (37.3)	High	130 (43.3)
Yes - Increased	77 (25.7)	Low	170 (56.7)
Yes - Decreased	111 (37)	**Smoking**	
Physical Activity		Yes	77 (25.7)
Decreased Activity	128 (42.7)	No	223 (74.3)
Increased Activity	91 (30.3)	**Smoking Change (Among Smokers)**	
No Change	81 (27)	No Change	21 (27.27)
Diet Change		Yes - Decrease	32 (41.56)
Consuming balanced food*	91 (30.3)	Yes - Increase	24 (31.17)
Consuming unhealthy food#	79 (26.3)	**Alcohol**	
Both	130 (43.3)	Yes	59 (19.7)
Meal Frequency		Occasionally	71 (23.7)
<3 Times A Day	107 (35.7)	No	170 (56.7)
3-6 Times A Day	187 (62.3)	**Bowel Disturbance**	
>6 Times A Day	6 (2)	Yes	112 (37.3)
Mid Night Binge		Sometimes	51 (17)
Never	141 (47)	No	137 (45.7)
Occasionally	93 (31)	**Hours Of Sleep**	
Yes - Frequently	66 (22)	<6hrs	85 (28.3)
Concentration Affect		6-8hrs	184 (61.3)
Maybe	66 (22)	>8hrs	31 (10.3)
Yes	178 (59.3)	**Sleep Change**	
No	56 (18.7)	No Change	101 (33.7)
Mood Swing		Yes - Lack Of Sleep	140 (46.7)
Sometimes	3 (1)	Yes - Oversleeping	59 (19.7)
Yes	211 (70.3)	**Covid Duty Hours**	
No	86 (28.7)	<8hrs	185 (61.7)
Fatigue From Work Due To PPE		8-12hrs	89 (29.7)
Sometimes	140 (46.7)	>12hrs	26 (8.7)
Frequently	123 (41)	**Post Covid Duty Off**	
Rarely	37 (12.3)	Yes	175 (58.3)
		Sometimes	78 (26)
		No	47 (15.7)

* Food that Includes Carbs, Proteins, Cereals, Fruits, Vegetables; # More Unhealthy/ Junk Food/ Ordering Fast Food

Table 2: Smoking and its association with smoking changes post pandemic

Smoking Consumption	No	Yes
Changes in Smoking Consumption	223	77
No Change Post Covid Pandemic	NA	21 (27.27)
Yes- Decrease Post Covid Pandemic	NA	32 (41.56)
Yes-Increase Post Covid Pandemic	NA	24 (31.17)

NA= Not applicable

Table 3: Alcohol consumption before and after the Pandemic

Alcohol Pattern	Alcohol changes		
	No change	Yes - decrease	Yes - increase
Occasionally	45(72.6)	20(41.7)	6(30)
Yes	17(27.4)	28(58.3)	14(70)
Total	62(100)	48(100)	20(100)

P value 0.000 (Significant)

Table 4: Sleep changes due to the pandemic

Sleep Pattern	Sleep changes		
	No change	Lack of sleep	Oversleeping
<6hrs	15(14.9%)	68(48.6%)	2(3.4%)
6-8hrs	78(77.2%)	70(50%)	36(61%)
>8hrs	8(7.9%)	2(1.4%)	2135.6%)
Total	101(100%)	140(100%)	59(100%)

P value 0.000 (Significant)

We also analysed the impact of covid duties, covid duty hours and post covid duty off on the lifestyle and mental health of health care professionals. We found an association between working in a covid environment and level of change in physical activity [p value 0.010 [p<0.05]], diet change [p value 0.007 [p<0.05]], frequency of meals [p value 0.031

Table 5: Association between Social isolation and other variables

Variables	Social isolation			Total	P value
	<1 month (n=116, 38.7%)	1-3 months (n=75, 25%)	>3 months (n=109, 36.3%)		
Weight change					
No Change	57(50.9%)	22(19.6%)	33(29.5%)	112	0.008 (<0.05)
Yes - Decreased	32(28.8%)	29(26.1%)	50(45%)	111	
Yes - Increased	27(35.1%)	24(31.2%)	26(33.8%)	77	
Midnight binge					
Never	63(44.7%)	34(24.1%)	44(31.2%)	141	0.039 (<0.05)
Occasionally	36(38.7%)	26(28%)	31(33.3%)	93	
Yes - Frequently	17(25.8%)	15(22.7%)	34(51.5%)	66	
Concentration change					
May be	32(48.5%)	21(31.8%)	13(19.7%)	66	0.023 (<0.05)
Yes	66(37.1%)	38(21.3%)	74(41.6%)	178	
No	18(32.1%)	16(28.6%)	22(39.3%)	56	
Panic attack					
No	98(45.6%)	48(22.3%)	69(32.1%)	215	0.000 (<0.05)
Yes - but haven't gotten help	9(19.1%)	11(23.4%)	27(57.4%)	47	
Yes - gotten help	9(23.7%)	16(42.1%)	13(34.2%)	38	
Fear of COVID					
High	45(34.6%)	25(19.2%)	60(46.2%)	130	0.006 (<0.05)
Low	71(41.8%)	50(29.4%)	49(28.8%)	170	

Table 6: Association between covid duty and other variables

Variables	COVID Duty		Total	P VALUE
	Yes (n=269, 89.7%)	No (n=31, 10.3%)		
Physical Activity				
Decreased activity	108(84.4%)	20(15.6%)	128(100%)	0.01 (<0.05)
Increased activity	82(90.1%)	9(9.9%)	91(100%)	
No change	79(97.5%)	2(2.5%)	81(100%)	
Diet Change				
Both	122(93.8%)	8(6.2%)	130(100%)	0.007(<0.05)
Consuming balanced food*	74(81.3%)	17(28.7%)	91(100%)	
Consuming unhealthy food#	73(92.4%)	6(7.6%)	79(100%)	
Meal frequency				
<3 times a day	102(95.3%)	5(4.7%)	107(100%)	0.031(<0.05)
3-6 times a day	161(86.1%)	26(13.9%)	187(100%)	
>6 times a day	6(100%)	0	6(100%)	
Sleep Change				
No change	87(86.1%)	14(13.9%)	101(100%)	0.015(<0.05)
Yes - Lack of sleep	133(95%)	7(5%)	140(100%)	
Yes - Oversleeping	49(83.1%)	10(16.9%)	59(100%)	
Fatigue At Work Due To PPE				
Sometimes	128(91.4%)	12(8.6%)	140(100%)	0.000(<0.05)
Frequently	115(93.5%)	8(6.5%)	123(100%)	
Rarely	26(70.3%)	11(29.7%)	37(100%)	
Alternate Relaxation Method				
Yes	81(84.4%)	15(15.6%)	96(100%)	0.039(<0.005)
No	188(92.2%)	16(7.8%)	204(100%)	

* Food that Includes Carbs, Proteins, Cereals, Fruits, Vegetables; # More Unhealthy/ Junk Food/ Ordering Fast Food

[p<0.05]], sleep changes [p value 0.015 [p<0.05]], Fatigue [p value 0.000 [p<0.05]], new relaxation techniques [p value 0.039 [p<0.05]].

We also found an association between covid duty hours and weight change [p value =0.005[p<0.05]], sleep changes [p value =0.000[p<0.05]], fear of contracting the infection [p value =0.04[p<0.05]].We found an association between post covid duty off and bowel disturbances [p value 0.014 [p<0.05]], sleep changes [p value 0.009 [p<0.05]], inability to concentrate [p value 0.008 [p<0.05]], panic attack [p value 0.005 [p<0.05]], new relaxation techniques [p value 0.031 [p<0.05]].

DISCUSSION

In this study, we analysed basic factors that can easily be affected by a pandemic. These factors influence our mental and physical health. The survey targeted health care workers specifically as they are at a higher risk of being affected by the disease physically and mentally. Many studies have shown that healthcare Professionals' who worked in a covid environment were affected more in comparison to the general public.[1] This could be due to a number of factors. In the early months of the pandemic, stress was higher in health care professionals due to lack in knowledge of the disease, shortage in no. of beds,

Table 7: Association between Covid duty hours and other variables

Variable	COVID duty hours			Total	P value
	<8hrs (n=185, 61.7%)	8-12hrs (n=89, 29.7%)	>12hrs (n=26, 8.7%)		
Weight change					
No Change	78(69.6%)	27(24.1%)	7(6.3%)	112(100%)	0.005 (<0.05)
Yes - Decreased	57(51.4%)	37(33.3%)	17(15.3%)	111(100%)	
Yes - Increased	50(64.9%)	25(32.5%)	2(2.6%)	77(100%)	
Sleep Change					
No change	79(78.2%)	19(18.8%)	3(3%)	101(100%)	0.000(<0.05)
Lack of sleep	59(42.1%)	58(41.4%)	23(16.4%)	140(100%)	
Oversleeping	47(79.7%)	12(20.3%)	0	59(100%)	
1.7% Fear Of Covid					
High	74(56.9%)	39(30%)	17(13.1%)	130(100%)	0.04(<0.05)
Low	111(65.3%)	50(29.4%)	9(5.3%)	170(100%)	

Table 8: Association between Post Covid duty off and other variables

Observation	POST DUTY OFF			Total	P VALUE
	Sometimes (n=78, 26%)	Yes (n=175, 58.3%)	No (n=47, 15.7%)		
Bowel Disturbance					
Sometimes	12(23.55)	36(70.6%)	3(5.9%)	51(100%)	0.014 (<0.05)
Yes	38(33.9%)	59(52.7%)	15(13.4%)	112(100%)	
No	28(20.45)	80(58.4%)	29(21.2%)	137(100%)	
Sleep Change					
No Change	23(22.8%)	70(69.3%)	8(7.9%)	141(100%)	0.009(<0.05)
Yes - Lack Of Sleep	38(27.1%)	70(50%)	32(22.9%)	93(100%)	
Yes - Oversleeping	17(28.8%)	35(59.3%)	7(11.9%)	66(100%)	
Concentration Change					
May Be	23(34.8%)	32(48.55)	11(16.7%)	66(100%)	0.008(<0.05)
Yes	45(25.3%)	113(63.5%)	20(11.2%)	178(100%)	
No	10(17.9%)	30(53.6%)	16(28.6%)	56(100%)	
Panic Attack					
No	56(26%)	135(62.8%)	24(11.2%)	215(100%)	0.005(<0.05)
Yes-But Haven't Gotten Help	15(31.9%)	21(44.7%)	11(23.4%)	47(100%)	
Yes-Gotten Help	7(18.4%)	19(50%)	12(31.6%)	38(100%)	
Alternate Relaxation Method					
Yes	16(16.7%)	61(63.5%)	19(19.8%)	96(100%)	0.031(<0.05)
No	62(30.4%)	114(55.9%)	28(13.7%)	204(100%)	

personal protective equipment, intensive care unit beds, changing treatment protocols, colleagues getting infected. In the later months' health care Professional's experienced more issues to be the mental pressure due to covid-19.[8]

Our study also shows that 89.7% of the healthcare workers worked in a covid environment and suffered from physical and mental changes in their health. This issue was well taken care of by most hospitals by regulating duty hours and providing post covid duty off to the doctors.[9] Our survey also shows that the shift duty system was followed and the majority of staff only worked for 6-8 hours and also received a day off after a day of hectic covid duty.

Studies show that although health care workers of all age group worked hard in such hard times due to increased workload, staff aged 18-40 was most commonly seen working in a covid ward and ICU, especially postgraduate students.[10] According to our study also, 76% of the participants were young health care workers. Gender also played an important role in determining the effect of the pandemic. Most previously done surveys found that the female gender was more closely associated with seeing covid patients, this could be since the nurses comprise of a large population of the health care workers. Nurses spend more time with the patients and are in closer contact, thus increasing their changes of contracting the disease and affecting their mental health.[10,11] 54.7% of the participants that answered our survey are females.

Increased workload and change in the routine of health care providers due to the pandemic has largely affected their lifestyle. Health care workers experienced changes in their diet, exercise, weight, sleep and many such factors. Many studies, reported a loss of appetite of the health care workers compared to their diet before the pandemic. This could be attributed to the fact that they had increased workload, wearing PPE, working for hours in a stressful environment, not meeting family and friends often, skipping meals.[7,12] According to our survey 35.7% of the participants were skipping meals and consuming less than three meals a day.

This decrease in appetite and stress can result in weight loss. By the statistics of our study, 37% of the health care workers noticed a decrease in weight. Although a decrease in weight can be due to loss of appetite, 25% of the participants noticed an increase in weight which could be due to lack of physical activity, consuming unhealthy fast food, anxiety. Studies show that health care workers have reported a decline in level of physical activity compared to before the pandemic.[7,12] 42.7% of the health care staff were physically less active compared to covid-19. Bowel disturbances are also common due to change in diet pattern, skipping meals, less physical activity, smoking, alcohol, anxiety and increased work load. A previous study shows that healthcare workers suffered from indigestion as a result of the pandemic.[13] Although our survey shows that only 37.3% of them had stomach upset and indigestion.

A sudden change in lifestyle due to the pandemic and its effect on one's mental health and result in people choosing to smoke or consume more alcohol to cope with their stress. A survey done in the early months of the pandemic shows that consumption of alcohol, smoking and substance abuse was commonly noticed among the healthcare workers.[12] According to our study, only 25.7% of the participants were smokers even before the pandemic, of which 27% continued to smoke, 31.17 % increased the amount of cigarettes smoked. Some also noticed a decrease in their habit of smoking and consumption of alcohol which could be due to the lockdown and unavailability of cigarettes and alcohol.

The commonest symptom of troubled mental status could be a disturbance in sleep cycle. A troubled mind can easily affect one's sleep. Lack of sleep, oversleeping, frequent waking up at night were all commonly noticed in health care workers during the covid-19 pandemic, by some previously conducted studies.[14] Our survey also found many health care Professionals' experienced sleep disturbances. 46.7% were suffering from insomnia and 19.7% were oversleeping. Inability to concentrate was another common feature noticed among most health care staff.[7,12] Increased workload, lack of sleep, social isolation could be some reasons behind the trouble concentrating. Our study also reports that 59.3% of the participants had regular issues with concentration and 22% of them experienced this occasionally. The impact of the pandemic on the mental health of healthcare workers can lead to extreme mood swings ranging from just irritability to depression.[5] According to our research a huge portion of the participants; 70.3% of them, were experiencing mood swings.

Working in a covid ward or ICU for hours, donning and doffing of PPE can lead to both mental and physical exhaustion. Thus fatigue/ burnout was noticed in most health care workers all over the world.[4,6,8] Based on the results of our survey, we also noticed that health care providers suffered from fatigue/ burnout.

The sudden advent of this pandemic, led to a lot of chaos and panic amongst people, especially the Heath care workers, as they were in close contact with the infected patients. This created fear among them, as they were worried about contracting the disease and infecting their friends and family.[13] Treating a new condition such as covid was also one of the reasons for the panic attacks, anxiety and fear.[4,8,9] According to our survey most health care workers rated their fear approximately 6-8 out of 10. Around 28.4% of them had panic attacks in the last few months. We also studied that due to social isolation and following the rules of the quarantine and lockdown, most health care worker couldn't meet their family and friends. This can make them reluctant to work and lead to added stress, mood swings, lifestyle changes, sleep disturbances and anxiety.[6]

Our study reported that 36.3% [109] of the participants had not visited their family in more than three months.

Owning to this massive impact of the pandemic on the lifestyle and mental health of health care providers, we suggest that help should be provided to doctors and nurses to cope with the stress. They should be encouraged to start new relaxation techniques like yoga and meditation, break should be provided post covid duty, they should be encouraged to exercise and eat healthy, food should be provided while these doctors and nurses are quarantined, they should help each other out at work, covid testing should be done for their safety and assurance, mental health surveys should be conducted. Individual and group counselling and tele-psychiatry sessions could also help. Although this study brings out the impact of covid-19 on the lifestyle and mental health of health care providers, it has certain limitations. The study was conducted only for a short period of time and the questionnaire was prepared only in English. It included a very small sample size (300).

CONCLUSION

It is evident that the covid-19 pandemic has created a stir in the lives of health care workers by affecting their mental health and lifestyle. It's so complex that the long term impact of disturbed mental health and alternations in lifestyle can lead to permanent psychological problems. It is essential to regularly screen medical professionals to determine their physical and mental health. Help can be provided to be health care workers by the hospital administration by involving a multidisciplinary psychiatric team.

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