Impact of COVID-19 on the Mental Health of the Society & HCW (Healthcare workers): A Systematic Review

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ABSTRACT

Corona virus is an infectious virus originated in Wuhan, China. The virus has rapidly spread throughout the world as a global pandemic and created public health emergency. Pandemics lead to heightened levels of stress and fear and anxiety are common responses to any stressful situation. Healthcare workers being the frontline warriors in any pandemic, mental health is greatly affected among them and calls for an active intervention to restore and maintain the mental health. This review aims to investigate the impact of novel coronavirus on the society and healthcare workers. A systematic search of the databases from PubMed, PMC, Google Scholar and Science Direct was conducted. Our search strategy yielded 59 citations. 49 papers were excluded by title and abstract review and in-depth review was done for 10 articles. The studies dealt with finding the magnitude of anxiety, fear, depression etc among the general population as well as the health care workers with the help of self-administered questionnaires. 50.4 % of the health care workers had depression, 44.6% had anxiety and 34% had difficulty in sleeping. These studies revealed a significant level of anxiety, fear, depression among them and the strategic interventions undertaken to combat the emerging mental health issues among them.

Keywords: Coronavirus, Health care workers, Mental health, Anxiety, Depression

1. INTRODUCTION

Coronavirus disease (COVID-19) is a single stranded, enveloped ribonucleic acid virus responsible for producing an influenza-like syndrome.[1] The coronavirus outbreak came into light on December 31, 2019 when China reported the World Health Organisation of a cluster of 40 cases of pneumonia of unknown etiology in Wuhan city in Hubei province, China.[2] Some of the patients were vendors and dealers in the Huanan Seafood market. Subsequently the disease spread to more Provinces in China and to the rest of the world Looking at the stretch of countries this outbreak spread to, WHO declared it a Public Health Emergency of International Concern on 30th January 2020[3] and on 11th of March, WHO declared COVID-19 - a pandemic as by then about 114 countries were affected.[3]

The global outbreak of coronavirus has reached a toll of over 40 lakh cases worldwide with over 2.76 lakh cases of death as on 09 May 2020.[4]

The highest number of coronavirus cases is reported in United States with total cases of over 13 lakh and 78000 deaths so far. The second highest number of cases is reported to be in Spain with over 2.6 lakh cases and over 26000 deaths. The coronavirus cases in India is increasing exponentially with total number of 59765 cases and death toll of 1986 cases as on 09 May 2020.[4]

Despite: early responses from institutions; declaring a state of national emergency on 31 January 2020; implementing limits on public gatherings affecting schools, conferences and sport events; and healthcare restrictions in public places, the number of new cases continues to increase. Each region of the country faces similar and significant direct and indirect health care system challenges.[5]

This widespread outbreak of Covid-19 has been associated with psychological distress and symptoms of mental illness on the general public and especially on the healthcare workers who are the frontline warriors dealing with the patients infected with coronavirus.[6] Few studies have been conducted across the world to assess the magnitude of mental trauma and psychological stress among the healthcare workers and to find out strategies to combat this mental exhaustion and trauma among them. This review aims to have an in-depth literature base about Covid-19 and its impact on the society and the health care workers. The objective of the current review was designed to summarize the existing literature addressing mental health concerns related to the COVID-19 pandemic.

2. METHODOLOGY

The current article is a narrative review of the existing literature on the impact on mental health and interventions relevant to the COVID-19 pandemic. We conducted a systematic search of the databases from various online journals: Asian Journal of Psychiatry, Lancet Psychiatry, Annals of Internal Medicine, JAMA Network Open, International Journal of Environmental Research and Public Health and Medical Science Monitor. The search terms included "novel coronavirus", "COVID-19", "nCoV", "mental health", "psychiatry", "psychology", "anxiety", "depression" "mental exhaustion" and "stress" in various permutations and combinations. Our search strategy yielded 59 citations. Inclusion criteria of the search were articles studied on coronavirus and mental health of the society & healthcare workers. On reviewing the above citations, 33 papers were excluded by title and abstract review: because they dealt with other aspects of the COVID-19 outbreak, such as clinical characteristics, risk factors, public health and preventive measures, letters to the editors and organization of health care systems. We reviewed the remaining 26 articles that included: (1) coronavirus outbreak (2) a target population of healthcare workers caring for Covid-19 patients, (3) the impact on mental health of Covid-19 on healthcare workers, (4) the impact on mental health of Covid-19 on general population (5) therapeutic interventions and strategies. A careful review of these articles revealed 10 studies pertinent to mental health of the general population and the healthcare workers dealing with Covid-19 patients. Of these 10 articles selected for the review, 07 studies were cross-sectional and observational in design, one study was a review article and two were commentaries on the topic. There were six publications from China and two from India, one from USA and one from Singapore. Cross-sectional studies dealt with collection of data from the participants through self-administered questionnaires sent through WhatsApp application, emails and other social media sites.
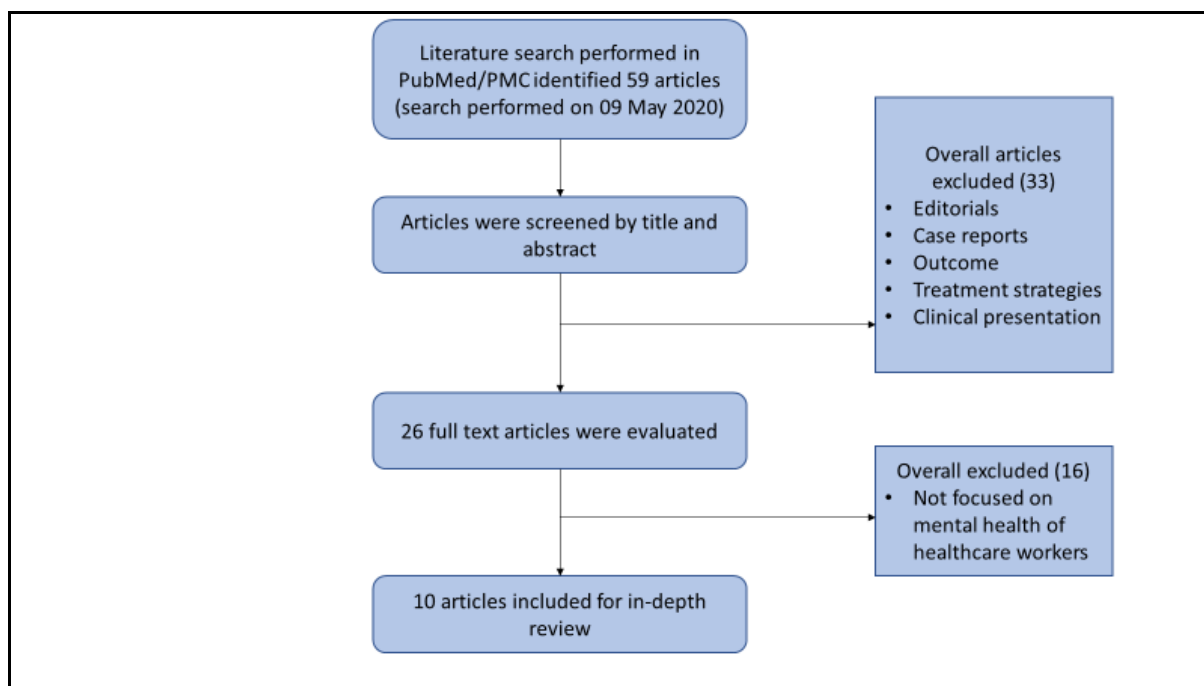
Fig. 1: Schematic diagram of methodology of selection of studies

3. RESULTS

3.1. Literature addressing the mental health impact of COVID-19 on healthcare workers

Health care workers included "medical" (physicians, nurses) and "nonmedical" personnel (allied health professionals, pharmacists, technicians, administrators, clerical staff, and maintenance workers). An observational study conducted by Tan BYQ in Singapore included participants who consented to fill the self-administered questionnaire regarding questions related to Depression, Anxiety, and Stress Scales (DASS-21) and the Impact of Events Scale–Revised (IES-R) instrument. The study aimed to assess the prevalence of depression, stress, anxiety, and posttraumatic stress disorder (PTSD) among all health care workers and compare the findings of mean DASS-21 and IES-R scores between medical and nonmedical health care workers. Out of 470 participants, 68 (14.5%) participants were screened positive for anxiety, 42 (8.9%) for depression, 31 (6.6%) for stress, and 36 (7.7%) for clinical concern of PTSD. The Pearson X_2 test and Student t test were used to compare categorical and continuous outcomes, respectively, between the 2 groups. The prevalence of anxiety was higher among nonmedical health care workers than medical personnel (20.7% versus 10.8%; adjusted prevalence ratio, 1.85 [95% CI, 1.15 to 2.99];P = 0.011), after adjustment for age, sex, ethnicity, marital status, survey completion date, and presence of comorbid conditions. mean DASS-21 anxiety and stress subscale scores and IES-R scores were higher in nonmedical health care workers.[7]

Roy D et al published an online article in the Asian Journal of Psychiatry to study the level of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. A cross-sectional, observational study was carried out with snowball sampling technique. An online semi-structured questionnaire sent through emails, WhatsApp and other social media to the participants. The online self-reported questionnaire consisted of four sections; awareness (knowledge), attitude, anxiety and perceived mental health care needs during the pandemic of the novel coronavirus. The 662 responders had a moderate level of knowledge about the COVID-19 infection and adequate knowledge about its preventive aspects. The

attitude towards COVID-19 showed peoples' willingness to follow government guidelines on quarantine and social distancing. The anxiety levels identified in the study were high. More than 80 % of the people were preoccupied with the thoughts of COVID-19 and 72 % reported the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about acquiring COVID-19 infection and distress related social media were reported in 12.5 %, 37.8 %, and 36.4 % participants respectively. The perceived mental healthcare need was seen in more than 80 % of participants. The study felt that there is a need to intensify the awareness and address the mental health issues of people during this COVID-19 pandemic.[8]

A cross-sectional, survey-based, region-stratified study conducted by Lai J et al in China included 1257 health care workers in 34 hospitals. The degree of symptoms of depression, anxiety, insomnia, and distress was assessed by the Chinese versions of the 9-item Patient Health Questionnaire, the 7-item Generalized Anxiety Disorder scale, the 7-item Insomnia Severity Index, and the 22-item Impact of Event Scale–Revised, respectively. Of all participants, 764 (60.8%) were nurses, and 493 (39.2%) were physicians; 760 (60.5%) worked in hospitals in Wuhan, and 522 (41.5%) were frontline health care workers. A considerable proportion of participants reported symptoms of depression (634 [50.4%]), anxiety (560[44.6%]), insomnia (427 [34.0%]), and distress (899[71.5%]). Multivariable logistic regression analysis showed that there was a lower risk of experiencing symptoms of distress in participants from outside Hubei province compared with those in Wuhan (odds ratio [OR],0.62;95% CI,0.43-0.88; p=.008). The study concluded that nurses, women, frontline health care workers engaged indirect diagnosis, treatment, and care of patients with COVID-19 were associated with a higher risk of symptoms of depression.[9]

A one-month cross-sectional observational study conducted by Xiao H et al in China included 180 medical staff who treated patients with COVID-19 infection. Levels of anxiety, self-efficacy, stress, sleep quality, and social support were measured using the Self-Rating Anxiety Scale (SAS), the General Self-Efficacy Scale (GSES), the Stanford Acute Stress Reaction (SASR) questionnaire, the Pittsburgh Sleep Quality Index (PSQI), and the Social Support Rate Scale (SSRS), respectively. Social support had significant association with self-efficacy and sleep quality of the medical staff whereas, levels of anxiety were significantly associated with the levels of stress, which negatively impacted self-efficacy and sleep quality.[10]

The impact of Covid-19 on the mental health of the health care workers is more among those who are directly dealing with the patients' affected with the virus. 50.4 % of the health care workers had depression, 44.6% had anxiety and 34% had difficulty in sleeping.[9]

3.2. Literature addressing the mental health impact of COVID-19 on the general population

Wang C et al conducted an online survey using snowball sampling technique to assess the immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. The online survey collected information on demographic data, physical symptoms in the past14days, contact history with COVID-19, knowledge and concerns about COVID-19, precautionary measures against COVID-19, and additional information required with respect to COVID-19. Psychological impact was assessed by the Impact of Event Scale-Revised (IES-R), and mental health status was assessed by the Depression, Anxiety and Stress Scale (DASS-21). This study included 1210 respondents from 194 cities in China. This concluded that more than half of the respondents i.e. 53.8% reported psychological impact of the outbreak as

moderate or severe; 16.5% reported moderate to severe depressive symptoms; 28.8% reported moderate to severe anxiety symptoms; and 8.1% reported moderate to severe stress levels. Most respondents spent 20–24 h per day at home (84.7%); were worried about their family members contracting COVID-19 (75.2%); and were satisfied with the amount of health information available (75.1%).[11]

A cross-sectional study conducted by Li Z et al aimed to assess the vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control in China. The study employed a total of 214 general public and 526 nurses (i.e., 234 front-line nurses and 292 non-front-line nurses) to evaluate vicarious traumatization scores via a mobile application-based questionnaire. The results showed that the vicarious traumatization scores for front-line nurses including scores for physiological and psychological responses were significantly lower than those of non-front-line nurses and was significantly higher among general population than those of the front-line nurses. Therefore, increased attention should be paid to the psychological problems of the medical staff, especially non-front-line nurses, and general public under the situation of the spread and control of COVID-19.[12]

Another cross-sectional study conducted by Wang Y et al to assess the psychological state of the public and its related factors during this Covid-19 outbreak included 600 participants in China. The Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) were administered to the participants. Overall anxiety and depression rates among them were 6.33% and 17.17% respectively. The anxiety risk among females were 3.01 times more than males; and was more in people aged > 40 years of age. Higher educated and professionals showed less risk of depression than less educated and industrial service workers.[13]

Covid-19 has put the public under mental trauma and stress. Anxiety level were found to be 28.8%[12] 17.17% had depressive symptoms.[14] The symptoms of stress were more prevalent among females and in older population.

3.3. Literature related to Therapeutic interventions and strategies

Early strategies that aim to prevent and treat vicarious traumatization in medical staff and general public are extremely necessary. In a commentary published in Annals and Academy of Medicine by Ho CSH et al, they mentioned that the government and the hospital authorities should take active participation in identifying the symptoms of psychological trauma and mental exhaustion faced by the health care workers by undertaking periodic interviews and counselling sessions. It is vital to identify those who are experiencing burnout or have psychological distress so that timely intervention can be provided, and staff should be encouraged to step forward without fear of being blamed.[14]

It is important to safeguard the morale and mental health of HCWs as this can influence the success of healthcare delivery and a review article by Rajkumar RP, published in the Asian Journal of Psychiatry, stated that, it is high time that measures are taken to help the health care workers working with Covid-19 patients boost their psychological well-being and help them reduce the fear by providing them utmost protective measures and periodic counselling.[15] The government and health authorities must timely relay accurate, evidence-based health information about the epidemic to the public via traditional and new media platforms, to minimize the detrimental impact of "fake news" that is rampant across social media. The government should ensure safety of the healthcare workers to increase the productivity, quality of health care and to instil confidence in the work entrusted upon them.[16]

Comprehensive support should be provided to safeguard the wellbeing of

health-care providers. Regular and intensive training for all healthcare providers is necessary to promote preparedness and efficacy in crisis management. This can be achieved by

- Ensuring that all the staff receives good quality communication and accurate updates
- Rotate workers from high stress to low stress functions
- Partner inexperienced workers with more experienced colleagues which helps to provide support, monitor stress levels and reinforce safety procedures
- Initiate, encourage and monitor work breaks. Implement flexible work schedules who are directly affected or have a family member affected
- Ensure staff know where they can access mental health and psychologically support services
- Connect with an energy source which provides positivity and meaning to life, like family, friends, prayers etc.
- Adequate training on infection control for staff, with clear protocols to follow, and the hospital directives for COVID-19 should be precise and disseminated to all staff.
- Preventive measures also need to be in place to ensure that HCWs themselves do not fall ill due to the virus during work exposure

4. CONCLUSION

Though there are only a few studies available in this field to date, it is evident that the COVID-19 pandemic has led to a vigorous and multifaceted response from various researchers across the world. Researches on mental health have been clearly taken into consideration among healthcare workers as well as in the general population. As the number of patients affected by this pandemic continues to increase exponentially, mental health challenges and issues have emerged as a keen concern for all. Leaders across the world be it medical or non-medical profession should actively focus on

improving the psychological well being and measure to tackle the mental health issues. Further, there is a need to develop mental health interventions which are practical, time-limited, culturally sensitive, and can be taught and disseminated to healthcare workers and the general population. There is also a need for further research in India as very few studies have been conducted so far in the country.

REFERENCES

1. Livingston E, Bucher K, Rekito A. Corona virus disease 2019 and influenza. Journal of the American Medical Association 2020; [Epub ahead of print]. https://doi.org/10.1001/jama.2020. 2633
2. Holshue ML, Debolt C, Lindquist S, Lofy KH, Wiesman J, Bruce H et al. First Case of 2019 Novel Coronavirus in the United States. N Engl J Med. 2020;382(10):929-36
3. https://www.who.int/emergencies/diseases/novel-coronavirus-2019.
4. COVID-19 Coronavirus pandemic update. Updated on 09.05.2020 https://www.worldometers.info/coronavirus. com
5. Gazzetta Ufficiale della Repubblica Italiana: GU Serie Generale n.55 del 04-03-2020. https://www.gazzettaufficiale.it/eli/id/2020/03/04/20A01475/sg(accessed05/032020).
6. Jillian Mock J. Psychological Trauma is the next crisis for coronavirus health workers. Scientific American. 28th April 2020. (https://:www.scientificamerican.com)
7. Tan BYQ, Chew NWS, Lee GKH, Jing M, Yeo LL, Zhang K et al. Psychological Impact of the COVID-19 Pandemic on Health Care Workers in Singapore. Annals of Internal Medicine. 2020;1-3 (https://annals.org by India: ANNALS Sponsored user on 05/07/202)
8. Roy D, Tripathy S, Kar SK, Sharma N, Verma NK, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. 2020; 51:102083
9. Lai J, Ma S, Wang Y, Cal Z, Hu J, Wei N et al. Factors Associated with Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Network Open.2020;3(3):1-12

10. Xiao Z, Zhang Y, Kong D, Li S, Yang N. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China. Medical Science Monitor. 2020; 26: e923549

11. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int. J. Environ. Res. Public Health. 2020; 17 (doi:10.3390/ijerph17051729)

12. Li Z, Ge J, Yang M, Feng J, Quio M, Jiang R et al. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. Brain, Behavior, and Immunity. (https://doi.org/10.1016/j.bbi.2020.03.007)

13. Wang Y,Yu D, Ye J, Wei W. Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. Psychology, Health and Medicine. 2020;1-11 (https://doi.org/10.1080/13548506.2020.1746817)

14. Ho CSH, Chee CYI, Ho RCM. Mental Health Strategies to Combat the Psychological Impact of COVID-19 Beyond Paranoia and Panic. Annals and Academy of Medicine, Singapore. Article in Press | 'Online First' Access.

15. Rajkumar RP. COVID-19 and mental health: A review of the existing literature. Asian Journal of Psychiatry. 2020 (https://doi.org/10.1016/j.ajp.2020.102066)

16. Adams JG, Walls RM. Supporting the Health Care Workforce During the COVID-19 Global Epidemic. JAMA. 2020;323(15):1439-40 (https://jamanetwork.com/ on 05/06/2020)

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