Review Article

A Review on the Impact of Covid-19 on Mental Health and Wellbeing of Health Care Workers

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ABSTRACT

The front-line health care workers faced many challenges and risks during this COVID-19 pandemic. The HCWs has a direct effect and carried a major burden and consequences in the control of this virus. Apart from physical stress the HCW suffering from psychological complications. This systemic review highlights the adverse mental health outcomes and other identifiable risk factors that affect their psychological behaviour during this COVID-19 pandemic. In this review, three databases were reviewed in different time points and literature have done according to WHO guidelines and PRISMA guidelines. In this review, we included various observational, experimental, and published articles that reported the mental health or psychological affects of the COVID -19 pandemic on HCWs. This study indicates that the COVID 19 pandemic has a potential effect on front-line HCWs in their psychological well-being. The data obtained from 24 studies in this review mainly from HCWs working at urban hospitals in China. Till now there is no evidence comparison with primary care workers. Whereas nurses are at high risk of adverse mental health outcomes compared to other health care workers. Other factors like gender, socioeconomic factors, underlying illness, lack of systemic support were the risk factors of adverse mental health outcomes. Furthermore, it is evident that PPE, exposure, workplace setting, testing have an impact on HCWs with COVID 19 infection and affect their mental health outcomes. It was observed that the maximum number of HCWs reported this COVID 19 infection during the first six months of the pandemic. The prevalence of hospitalization is 15% and with psychological problems of 1.5%. Still, extensive data is needed to observe the mental health problems among HCWs.

Keywords: COVID19, WHO guidelines, PRISMA guidelines, HCW- Healthcare workers.

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INTRODUCTION

Pneumonia like outbreak with unknown causes was found in Wuhan, China on 21st December 2019. WHO declared this COVID 19 infection as pandemic on 11th March2020, and with many strategies and guidelines developed by federal governments to protect the people. Without any standardized protocols, our HCWs geared up their duties to treat patients with the novel corona virus[1]. They became the highest risk and play a vital role as front-line warriors and therefore proper protection is mandatory for these HCWs.

It was revealed that a greater number of HCWs showed significant emotional distress during the earlier research conducted on severe acute respiratory syndrome (SARS), the Middle East Respiratory Syndrome (MERS), `and the Ebola virus. During the early stages of SARS infection, it was found that there was significant somatic and cognitive symptoms like anxiety, stress, burn out, etc in the study of 1257 health care workers. The documented evidence of severe psychological stress due to SARS is compared with this SARS COV-2 infection. The present situation put the health care workers into an unprecedented situation because of heavy pressure conditions during the treatment. Therefore, these health care workers are more prone to psychological distress as these medical staff is considered as a concern for urgent public health.

Only a few studies were evaluated till now on the mental health conditions of health care workers in the treatment of COVID 19 patients[2]. Hence this review aimed to address the mental health status of HCWs during this SARS-Cov-2 pandemic and the interventions to improve the psychological behaviour of these HCWs.

It was observed that the risk of pre-existing mental health among these HCWs worsen the psychological impact during this pandemic[3]. It was continuing the spread and deaths of HCWs due to the infection impacts the mental health of HCWs during the treatment phase and after the treatment phase also.

The other major influencers are quality and quantity of personal protective equipment, workplace environment, clinical condition, etc also affect the mental health and psychological behaviour of HCWs. Media reporting[4] also affects the mental health of HCWs.

Also, due to this infection, the usual practice of HCWs gets hampered and affects psychological[5]behaviour. According to British Medical Association, 45% of UK doctors suffered from various mental health disorders like anxiety, depression, stress, etc become worse due to COVID 19 illness. There are no proper interventions till now to show

the impact of mental health illness on HCWs. This review prioritizes the mental health needs of HCWs and provide them with the appropriate tools to reduce the adverse mental health outcomes.

It is therefore much essential to identify the most vulnerable health care workers who have the highest impact on the COVID19 pandemic and support them with [6]psychological interventions like increasing the levels of work satisfaction, increasing staff morale, decreasing absenteeism.

AIM

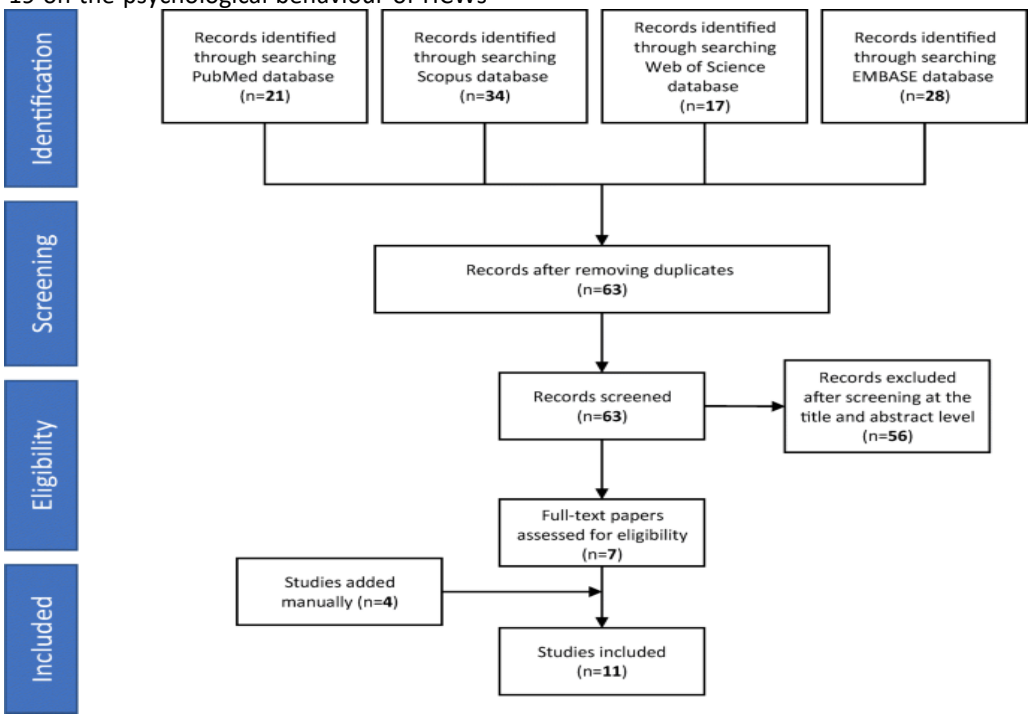
The main aim of the review is that to estimate the impact of the COVID 19 on the psychological behaviour of HCWs specially to identify which sub-groups are most vulnerable to this psychological distress.

This review contributes to getting focussed and informed organisational support for the mental health well-being of HCWs. The systemic review and extensive literature search give the evidence-based tools to determine the mental health outcomes.

PERSPECTIVE AND METHODOLOGY

Study protocol

The study protocol was designed according to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Protocols (PRISMA-P) guidelines.



Literature search strategy

The three databases used for search strategy and the information obtained from Scopus, Pub Med, and Google Scholar can be collected from 01 May to 09 Dec 2020. All the data was evaluated extensively after the database was searched.

Study selection process

The eligibility of this study included all peer-reviewed, full-text articles from 01 January to 09 Dec 2020 reporting only SARS-CoV-2 infection amongst HCW populations. Only articles that are in English are available. The articles have extensive comprehensive data, viewpoints comments, short communications related to the psychological behaviour of HCWs were included and without all these data were excluded.

Also, the selected articles available were compared and screened with the already existing inclusion and exclusion criteria.

Data collection

There are different variables in this study that were obtained from the selected papers like author names, year and date of publication, publication country, study design, and the total number of health care workers(HCWs). The quantitative data of the study were extracted from different researchers and combined. The data pertained to the psychological behaviour of HCWs from various sources were maintained and extracted to Excel.

Research study Paradigms

The qualitative analysis of the data was thoroughly reviewed from the vast number of articles and identified the mental health outcomes of HCWs during COVID 19 pandemic. The data obtained from various sources were extracted into different tables with all the relevant data.

The methodological quality and risk assessment of the included articles can be accessed by the cross-sectional and Observational Cohort Studies published by the National Heart, Lung and Blood Institute (NHLBI). This assessment

tool consists of scores between 9-12 and their responses. In this review, interested mental health outcomes can be expected from HCWs and fair results will be obtained between 9-12.

Statistical approach

By calculating percentages, the categorical dichotomous variables distribution was described. For continuous data the mean and 95% confidence intervals (CI) and to extract the standard deviation or the range of the data, the formula (upper limit-lower limit)/4 was used. For all binary variables, the prevalence pooled percentage, and corresponding 95% CI were calculated. A Funnel plot and Egger's test was used to assess the publication bias.

Quality assessment and data extraction

Four electronic databases like Pub Med (n=21), Scopus (n = 34), and WoS (n = 17). EMBASE (n = 28) and Google scholar for manual search were used through systemic search to identify about one hundred relevant articles.

Out of 37 articles, eleven articles were included for review and the remaining were excluded because of duplication. Four preprint articles were selected through manual search[7].

The score obtained through the quality assessment of the NHLBI[8] mean was found to be 11.81/14 (10–13/ 14). The psychological status of HCWs during the COVID19 pandemic can be studied and exclusively evaluated through the characteristics of the included articles. Three main studies revealed that female nurses comprised the main proportion compared to all other health care workers.

Mostly the studies were done in China as it was the first country that experienced the COVID19 infection followed by Italy and Spain. The outcomes of the study were reported as anxiety (9/11), depression (6/11), followed by stress (5/11), distress (4/11), and insomnia (2/11). The other outcomes found in this study were also assessed like risk perception, sleep quality, fear, self-efficacy, social desirability, death anxiety, and social support.

The total score of anxiety was significantly higher than the standard national points (29.78 + 0.46), ($t = 4.27$, $p < 0.001$) among HCWs was found to be 32.19 ± 7.56 points. The anxiety positivity score is also related to total stress load.

Depression among HCWs can be seen in various studies, 12.1% [18], 13.5% [7], and 50.4% [9]Compared to all, stress was a potential mental health problem.

According to the study[10], the psychological disturbance in HCWs and around 29.8% of HCWs observed stress conditions. In another study, it was reported that 63% HCWs reported various mental health outcomes like stress, insomnia, and depression. Also a study by [11] GHQ-12 score ≥ 3 was reported among 39.1% of respondents which was significantly higher than normal times.

On the other hand, the lowest prevalence of anxiety, depression and other mental health problems among HCWs was 24.1% [7], 12.1% [18], and 29.8% [12], respectively, and the highest prevalence was seen in Spain as 67.55%, 55.89%, and 62.99% of HCWs respectively[13]. It is very common that HCWs are usually experiencing insomnia and other sleep disorders or low sleep[14] quality. It is evident that sleep quality is having a direct relationship with levels of anxiety. Social support in turn has a positive impact on sleep quality and also a negative effect on stress and anxiety. Also, medical staff including administrative staff experienced moderate to severe stress and fear about 70.6% and 58.4% respectively.

Other factors that affect the psychological behaviour of HCEs, in that. Working areas also plays a vital role as the high incidence of infection can be associated with mental disturbance and stress. All these studies are mainly based on Wuhan, China data having the highest infection rate in the earlier times of pandemic. Other data from Italy showed that mental health problems of medical staff were higher when compared with general people.

DISSEMINATION OF RESULTS

WHO declared SARS -COV-2 as a pandemic in March 2020 and about 200 countries still suffering from this infectious disease. This situation became a very burden and a challenge to health care workers. The deaths of HCWs during the treatment process were serious threat and fear to other colleagues. This fear was spreading and leads to various adverse mental health disorders. Till now only a few studies showed the psychological morbidity and various mental health problems during this pandemic.

From the data of included studies, psychological symptoms can be seen by the substantial proportion of analyzed data. When observing the documentation of other SARS infections it was found that 89% of HCWs have psychological disorders and the other study showed that the impact of these infections and the prevalence of somatic symptoms, sleep problems, anxiety, and worries in HCWs were 69.0%,74.2%,77.4%,52.3% respectively.

Using GHQ-12 questionnaire[15] , showed that 57% of HCWs suffered from adverse mental health disorders due to SARS outbreak and by Event scale revised data it was found that higher mental distress was experienced due to the MERS outbreak.

According to the results, it was indicated that the lowest prevalence of psychological disorders in HCWs with SARS-Cov2 compared with MERS. It was evident that pandemics created a significant source of fear and anxiety. The infection itself is not responsible for fear and anxiety, but also the rate of transmission, news about spreading, etc.

The causes of mental health disorders and trauma during this SARS outbreak were quarantined HCWs, frustration, isolation, working in the high-risk environments, and close contact with infected people. Another main cause of anxiety or mental disturbances during this SARS-CoV-2 infection was the presence of asymptomatic patients and the fact of spreading through them. Also, few studies

showed that these mental health disorders are common in nurses when compared to physicians. The reason for mental distress among nurses is that they are having direct contact and intense contact with patients and working in the high-risk environments. According to the study conducted[16] in Toronto, the HCWs who are working in close contact with infected patients have highest the IES score compared to other HCWs who are not in direct contact. The psychiatric morbidities in HCWs (75.3%) were three times more than in general people (24%). As the HCWs are frontline workers in any type of epidemics or pandemics suffered from mental health distress for years.

Now during this SARS-CoV2 outbreak, the number of COVID19 patients increased dramatically and it is needed to discuss the psychological behaviour of HCWs because of the overburden in these life-threatening situations[17]. There is a challenge in manufacturing vaccines and medicines during these high transmission conditions. The mental health disorders of HCWs aggravate due to high mortality and morbidity of SARS CoV-2. Apart from all these, the other fact is that the shortage of protective equipment leads to pressure or stress among HCWs.

Therefore, to address the psychological needs of health care workers regular psychological care and interventions to minimize their mental health distress were designed.

The different types of interventions are

Supportive interventions: It includes support by family members, society, community, organizations, colleagues, feedback channels, online psychological services,

Motivation & Encouragement interventions: Recognition of their efforts in terms of appreciation by government or local society, activating their responsibility, conducting refreshing programs and relaxation techniques like meditation, yoga, and exercises.

Protective interventions: Supply of adequate protective equipment, assessing HCWs physical needs, frequent breaks, rotating shifts at high- risk departments, identifying high-risk HCWs, etc.

Educational & Training interventions: Mental health communication programs, online psychological education, books, manuals, stress management programs, mindful programs, self-confidence training programs.

By using the information technology and artificial intelligence tools these supportive, motivative, protective, and educational interventions can be achieved in the treatment of SARS-Cov-2 can be performed. These tools can facilitate the improvement of mental health problems of HCWs during these pandemics.

CONCLUSIONS

As per the researchers and scientists the SARS, MERS, and the present pandemic SARS-Cov-2 can be considered as a bio disaster. Because of regular infections, the medical staff has an intense response to face these challenges. Thousands of HCWs workers frontline warriors during these pandemic situations. According to this extensive systemic literature search showed that considerable health care workers experiencing adverse mental health problems. By addressing their mental health status and approaches in this review can overcome their psychological distress. But being the sample size of this study is small and need of improving search strategy by including articles other than English language.

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