

Effects on Mental Health of Health Care Workers Due to Covid-19



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Abstract

A pandemic which has affected 54 million people and 1.4 million deaths around the globe, is causing severe health problems both physically and mentally. With its fourth wave almost around the corner, this paper evaluates the mental health of paramedics workers using the DASS 21 questionnaire, in major cities of Pakistan. Without proper equipment and precautionary measure taken by the general population and high spread rate of the Covid19 virus. With the total cases of 541,031 including 11560 deaths and 496,745 safely recovered in Pakistan. Healthcare workers' suffers from stress and anxiety as the consequences of COVID positive cases. After gathering the data and analyzing with the help of different statistical methods. It is found that the people living with their families are more stressed than the ones living alone. Other than this many other findings were also revealed by the study that can be observed in the result section.

Chapter 1

Introduction

1.1 Overview

Coronavirus disease 2019 (COVID-19), also known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is a virus that is spreading both locally and globally. [1] The World Health Organization convened an open hearing and proclaimed the worldwide COVID-19 pandemic a public health emergency [2]. Confronted with this crucial scenario, front-line national healthcare personnel are closely engaged in the diagnostic, therapy, and care of COVID-19 patients due to which they are at risk of experiencing psychological distress and other mental health symptoms. [3,4,5] Studies found that health care workers feared pandemic with the biggest threat as the carrier of this disease to their relatives, acquaintances, and colleagues. They also felt lack of certainty and stigmatization, observed hesitancy to work or pondering on resignation. Severe stress, anxiousness, and depressive symptoms have been also observed which could have long-term psychological consequences.

1.2 Problem Statement

Health care workers exposed to coronavirus disease 2019 (COVID-19) could be psychologically stressed.

1.3 Objectives

To assess the magnitude of mental health outcomes and associated factors among health care workers treating patients exposed to COVID-19 in Pakistan.

1.4 Limitations and Scope

Psychological support services, such as phone, web, and software counseling have been widely implemented by local and national mental health institutions in response to the COVID-19 pandemic. As one of the largest growing company announced the establishment of countrywide psychological counseling hotlines to aid amid the pandemic scenario[6]. However, evidence-based assessments and mental health treatments aimed at front-line health care professionals are uncommon.

1.5 Thesis Outline

I organize the rest of this dissertation as follows.

In Chapter 2, I describe the literature review.

Finally, in Chapter 3, I conclude my thesis.

Chapter 2

Literature Review

2.1 Section Name in Literature Review

The COVID 19 pandemic has caused a lot of distress among people in many areas of life. The research conducted during the SARS outbreak more than 10 years ago suggested that the health care workers were suffering from depression anxiety and stress [7]. The same is being anticipated currently for the coronavirus pandemic. For previous studies conducted between Jan 2020 to Aug 2020 it is quite clear that the method to collect data has mostly been through surveying frontline healthcare workers during this pandemic. These were done physically, with participation rate 68.7 percent [8] or through online survey forms [9].

The main objective of these studies is to find the relationships between COVID 19 and psychological related variables. The questionnaires that were observed during this literature review consist of 2 sections one part takes input of the personal information such as age, gender, role, marital status, experience, education, and the other part is mostly based on professionally developed self-assessment questionnaires. Such as the Insomnia Severity Index (ISI) or the Depression, Anxiety, and Stress Scale (DASS)-21 for example [10].

The DASS Scale 21 consist of three sub items to calculate Anxiety, Stress and Depression. To calculate each section, consist of 7 question. The rating of DASS sub things, for example, misery, tension, and stress can be appraised as ordinary, gentle, moderate, and incredibly extreme. Everything is scored in a self-evaluated Likert scale from 0 to 3. The DASS scale has more limited adaptation and longer form (including 21 and 42 things, separately). In DASS-21, the last score of everything is increased by two to acquire the last score [11].

The normal age of the members ran between 26-40 years. A large portion of the members were females [12]. suggests that different age groups show worry for different reasons. For example, age group (31-40) years was always worried if they might infect their families. Age group \geq 50 years felt stress after a patient they were looking after died [13]. A study Conducted in India and found that the healthcare workers were suffering from worries related to personal matters like being a source of infection for family and other health workers [13]. Possibility of being quarantined. Anxiety of household problems related to lockdown [14]. also found that health care workers were worrying because they had to contact different confirmed cases. Another study found out that the front line workers had trouble sleeping (insomnia) at night which made their worries worse [15]. It is essential to consider timely therapeutic treatment for stress management with healthcare workers [16].

Chapter 3

Conclusion and Discussion

3.1 Conclusion and Discussion

The impact of COVID-19 on the region of Pakistan shown in Table 3 explain what type of situation the south Asian region have faced during the pandemic. The gathered data was very diverse in nature. There are 68 percent female participants and 32 percent male. If the age brackets are discussed the age grouped (20-30-year-old) was the highest with 70.45 percent, followed by the age group (30-40 years) with 24.24 percent. The data distribution with 36.36 percent, 30.3 percent, 24.2 percent, 9.09 percent for Bachelors, PG Residents, Post Grad doctors and intermediate, in education levels, respectively. 49.2 percent of the people that responded to the survey were married and 50.8 percent are single. The values fall between different ranges that are categorized by the DASS21 paper. After the overall analysis of the evaluation for mental disorders the depression was found between severe and extremely severe. The anxiety was categorized to be extremely severe. The stress can be categorized into either extremely severe or severe. If the data is segregated between genders. The female participants of the survey scored more in all three categories: stress, anxiety, and depression. For men, the depression is categorized in moderate, severe, and extremely severe brackets. The anxiety for men is either in severe or extremely severe and stress in men is between the moderate, severe, and extremely severe categories. Whereas, for female participants the stress and depression lie in the upper severe and extremely severe category. For anxiety all the female participants fall in the extremely severe category.

References

- [1] Li Q, Guan X, Wu P, et al. Early transmission dynamics in Wuhan, China, of novel coronavirus-infected pneumonia [published online January 29, 2020]. *N Engl J Med*. 2020.
- [2] World Health Organization. Statement on the second meeting of the International Health Regulations (2005) Emergency Committee regarding the outbreak of novel coronavirus (2019-nCoV). Published January 30, 2020. Accessed February 2, 2020
- [3] Maunder R, Hunter J, Vincent L, et al. The immediate psychological and occupational impact of the 2003 SARS outbreak in a teaching hospital.
- [4] Bai Y, Lin CC, Lin CY, Chen JY, Chue CM, Chou P. Survey of stress reactions among health care workers involved with the SARS outbreak. *Psychiatr Serv*. 2004;55(9):1055-1057.
- [5] Lee AM, Wong JG, McAlonan GM, et al. Stress and psychological distress among SARS survivors 1 year after the outbreak. *Can J Psychiatry*. 2007;52(4):233-240.
- [6] The State Council of China. A notification to set up nationwide psychological assistance hotlines against the 2019-nCoV outbreak. Published February 2, 2020. Accessed March 3, 2020
- [7] K. K. Wu, S. K. Chan, and T. M. Ma, "Posttraumatic stress after SARS," *Emerg. Infect. Dis.*, vol. 11, no. 8, pp. 1297–1300, 2005.
- [8] J. Lai et al., "Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019," *JAMA Netw. open*, vol. 3, no. 3, p. e203976, Mar. 2020.
- [9] R. Rossi et al., "Mental Health Outcomes Among Frontline and Second-Line Health Care Workers During the Coronavirus Disease 2019 (COVID-19) Pandemic in Italy," *JAMA Netw. Open*, vol. 3, no. 5, pp. e2010185–e2010185, May 2020.
- [10] S. S. Chatterjee, R. Bhattacharyya, S. Bhattacharyya, S. Gupta, S. Das, and Banerjee, "Attitude, practice, behavior, and mental health impact of COVID-19 on doctors," *Indian J. Psychiatry*, vol. 62, no. 3, pp. 257–265, May 2020.
- [11] F. Shahzad et al., "Perceived Threat of COVID-19 Contagion and Frontline Paramedics' Agonistic Behaviour: Employing a Stressor–Strain–Outcome Perspective," *Int. J. Environ. Res. Public Health*, vol. 17, no. 14, p. 5102, Jul. 2020.
- [12] H. Cai et al., "Psychological impact and coping strategies of frontline medical staff in Hunan between January and March 2020 during the outbreak of coronavirus disease 2019 (COVID) in Hubei, China," *Med. Sci. Monit.*, vol. 26, pp. e924171-1, Apr. 2020.
- [13] R. Mohindra, R. R. V. Suri, A. Bhalla, and S. M. Singh, "Issues relevant to mental health promotion in frontline health care providers managing quarantined/isolated COVID19 patients," *Asian J. Psychiatr.*, vol. 51, p. 102084, 2020.
- [14] L. Kang et al., "The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus," *The Lancet Psychiatry*, vol. 7, no. 3. Elsevier Ltd, p. e14, 01-Mar-2020.
- [15] Effect of covid 19 on health care workers." [Online]. Available: https://www.researchgate.net/publication/343222483_Effect_of_covid_19_on_health_care_workers.
- [16] Y. T. Xiang et al., "Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed," *The Lancet Psychiatry*, vol. 7, no. 3. Elsevier Ltd, pp. 228–229, 01-Mar-2020.