

SPECIAL ISSUE

Digital Repository Universitas Jember



JURNAL Kesehatan Lingkungan





























Jurnal Kesehatan Lingkungan	Vol. 12	No. 1si	Hal. 1-144	Surabaya September 2020	ISSN 1829-7285
-----------------------------	---------	---------	------------	-------------------------	----------------






























P-ISSN:1829-7285
e-ISSN: 2540-881x

TABLE OF CONTENTS

ARTICLES

- | | | |
|---|--|---|
|  | Literature Review: Healthy Home as The New Normal for Covid19 Prevention |  |
|  | 10.20473/jkl.v12i1si.2020.1-10 | 1-10 |
|  | <i>Fairuz Haniyah Ramadhani</i> | |
|  | Study Literature Review : The Effect of Lockdown on the Covid19 Pandemic Period on Air Quality |  |
|  | 10.20473/jkl.v12i1si.2020.11-20 | 11-20 |
|  | <i>Shofi Hikmatuz Zahro</i> | |
|  | The Mental Health of Medical Workers During the Covid19 Pandemic: How Do We Manage It? |  |
|  | 10.20473/jkl.v12i1si.2020.21-28 | 21-28 |
|  | <i>Devi Arine Kusumawardani, Globila Nurika, Nurul Ulya Luthfiyana</i> | |
|  | Literature Review: Quarantine and Lockdown During Covid19 Outbreak Impact on Mental Health Problem |  |
|  | 10.20473/jkl.v12i1si.2020.29-37 | 29-37 |
|  | <i>Dea Rosa Gracia, Erica Rosa Rubetta</i> | |
|  | Management of Solid Medical Waste on One of the Covid19 Referral Hospitals in Surabaya, East Java |  |
|  | 10.20473/jkl.v12i1si.2020.38-44 | 38-44 |
|  | <i>Rani Ayu Wardani, R. Azizah</i> | |
|  | The Relationship of Student's Knowledge Level with Anxiety and Precautions the Spread Covid19 in West Nusa Tenggara |  |
|  | 10.20473/jkl.v12i1si.2020.45-50 | 45-50 |
|  | <i>Kholik Kholik, Ni Ketut Alit Suarti, Eneng Garnika, Moch Taufik Hidayatullah</i> | |
|  | The Effect of Movement Control Order During Covid19 Pandemic on Air Quality and Gas Emissions: A Review |  |
|  | 10.20473/jkl.v12i1si.2020.51-59 | 51-59 |
|  | <i>Muhammad Azmi Maruf</i> | |

-  **Literature Review: Risk Factors Affecting College Student's Mental Disorder During Covid19 Pandemic**  60-69
doi 10.20473/jkl.v12i1si.2020.60-69
 *Shofiyah Salma Farumi*
-  **The Impact of Ambient Air Pollution Toward Coronavirus Disease 2019 (Covid19): A Literature Review**  70-78
doi 10.20473/jkl.v12i1si.2020.70-78
 *Lulukatin Nasikhah, Aditya Sukma Pawitra*
-  **Experience and Insight Author in Preventing and Curbing the Novel Coronavirus (Covid19) Outbreak**  79-88
doi 10.20473/jkl.v12i1si.2020.79-88
 *Rahmidha Dwijayanti*
-  **Microbiology Indoor Air Quality at Hospital During the Covid19 Pandemic**  89-92
doi 10.20473/jkl.v12i1si.2020.89-92
 *Aryatama Rahardhiman, Ririh Yudhastuti, R. Azizah*
-  **Molecular Review Covid19 from the Pathogenesis and Transmission Aspect**  93-103
doi 10.20473/jkl.v12i1si.2020.93-103
 *Fery Setiawan, Heni Puspitasari, Jenny Sunariani, Ahmad Yudianto*
-  **Review: Medical Waste Management for Covid19**  104-120
doi 10.20473/jkl.v12i1si.2020.104-120
 *Hendri Sutrisno, Fitriana Meilasari*
-  **Covid19 Pandemic: Management and Global Response**  121-128
doi 10.20473/jkl.v12i1si.2020.121-128
 *Haeril Amir, Sudarman Sudarman, Akbar Asfar, Andi Surahman Batara*
-  **The Impact of Covid19 Pandemic on Online Learning Process in the College at Southeast Sulawesi**  129-136
doi 10.20473/jkl.v12i1si.2020.129-136
 *Alchamdani Alchamdani, Fatmasari Fatmasari, Eka Rahmadani Anugrah, Nahda Putri Sari, Freddrika Putri, Astina Astina*
-  **How is The Coronavirus Outbreak Affecting The Daily Lives of University Students?**  137-144
doi 10.20473/jkl.v12i1si.2020.137-144
 *Dita Fahrul Nisa, Nuzulul Kusuma Putri*



SPECIAL ISSUE

THE MENTAL HEALTH OF MEDICAL WORKERS DURING THE COVID19 PANDEMIC: HOW DO WE MANAGE IT?

Devi Arine Kusumawardani¹, Globila Nurika^{2*}, Nurul Ulya Luthfiyana³

^{1,2,3}Faculty of Public Health, University of Jember, Jember 68121, Indonesia

Corresponding Author*:

nurikaglobila@unej.ac.id

Article Info

Submitted : 15 July 2020
 In reviewed : 5 September 2020
 Accepted : 22 September 2020
 Available Online : 30 September 2020

Keywords : *Mental health, medical workers, Covid19 pandemic, mental health management*

Published by Fakultas Kesehatan Masyarakat Universitas Airlangga

Abstract

Introduction: Covid19 pandemic has occurred in many countries and caused a world health crisis. The morbidity dan mortality rate due to Covid19 still rising until now. The outbreak of Covid19 was not only affected the mental health of the community but also affect the medical workers as the frontline. Therefore, we present an overview of the mental health outcomes in medical workers and describe the management at the organizational and personal level. Literature is obtained through searches from the ScienceDirect, PubMed, and Google Scholar databases which are further classified and summarized based on research questions. **Discussion:** The impact of the Covid19 pandemic on the mental health of medical workers shows that the majority of workers experience anxiety, insomnia, depression to severe stress. The risk of mental disorders in women is higher than men, nurses are higher than doctors, and middle and junior positions are higher than senior degrees. Efforts that have been made in controlling mental health problems for workers in health services include periodic mental health monitoring, psychological support through self-care, mindfulness techniques, active listening, music therapy, internal counseling, and problem-solving among ourselves. In addition, workers in health services must also get social support such as instrumental support to emotional support in the workplace. **Conclusion:** Medical workers in the health services have a very high risk of experiencing mental health problems during the Covid19 pandemic so that the role of leaders in every health care facility is required in carrying out stress management activities in the workplace.

INTRODUCTION

Since March 11, 2020, the World Health Organization has set Covid19 as a pandemic. Pandemic Covid19 is a condition of the emergency international public health that is unprecedented in modern history. Transmission of the virus occurs very massiv, resulting in levels of morbidity and mortality from Covid19 to be increased. Current since July 12, 2020, the virus SARS-Cov-2 has infected 12.322.395 people and resulted in 556.335 of death worldwide (1). During the pandemic Covid19, all countries in the world to implement a policy of physical distancing in the activity of day-to-day and every individual is encouraged to keep your distance and restrict activities that pose physical contact thereby reducing the probability of occurrence of transmission Covid19. However, health workers during a pandemic is actually a must do activity handling in a comprehensive manner to patients Covid19, so that the application of physical distancing is very difficult to do. This causes a high risk to the health workers to directly exposed to the virus SARS-Cov-2 in health facilities. In addition to the high risk of exposure to the virus in the workplace, health workers are also particularly vulnerable to experiencing physical pressure and psychological pressure as a result of the high activity and the need for health services in the care of patients during the pandemic Covid19 (2-3).

Limitations of resources such as infrastructure and the comparison of the number of health workers with patients Covid19 that is not balanced to be the main reason of the contact time of a health worker with the patient Covid19 in health facilities become longer (4). In addition, the emergence of the virus SARS-Cov-2 during the pandemic in a relatively short time lead to health workers not yet ready in providing clinical intervention for patients Covid19 (5). Up to this time the duration of the pandemic Covid19 is still uncertain, not finding the right therapy or vaccine to prevent virus infection, and the potential of health resources including personal protective equipment that is limited can also be trigger factors of the psychological impact for health workers. Error information circulating in the virtual world can also worsen the psychological condition of the health workers (6). Similarly, the stigma that exists in society against health workers who handle patients Covid19 should be a concern to the mental health of health workers remains stable.

Occurrence of stress or incidence of traumatic and other psychological problems experienced by the health workers during a pandemic Covid19 (3) can occur through direct contact with the patient Covid19, knowing someone who died as a result of exposure to Covid19, or know of a colleague quarantined or isolated.

Distress psychological cause a negative impact not only on the welfare of psychic health workers, but also have an impact on patient care and implementation of health systems in health care facilities (2). In addition, the term impact such as the occurrence of mental health problems are also related to reduction in performance efficiency, productivity decline, and absenteeism and even resignation of the health workers (7-8). Therefore, it is necessary the existence of a literature review about how to impact and intervention efforts of mental health on health personnel in health care facilities during a pandemic Covid19?

Literature review is aimed to formulate the impact and the intervention efforts of mental health on health personnel in health care facilities. Activities literature review is derived from 3 databases i.e. Pubmed, Google Scholar, and Science direct with key words 2 key words, namely: (1) Covid19 AND mental health care AND mental health service; and (2) Covid19 AND Manage* AND Mental Health AND Health worker. The inclusion criteria used in the search literature review are: (1) published Articles; (2) Published in the year 2020; (3) Open access and full text. Based on the results of the search, the number of literature review used in this article, as many as 35 articles covering observasiobal study, correspondence, commentary, and letter to the editor.

DISCUSSION

The Impact of the Pandemic Covid19 to the Mental Health of Health Workers

Literature sources publications from various different countries with geographical diversity, among others, China, Italy, and Brazil, shows that the pandemic Covid19 have an impact on the mental health of health workers in the Chinese territory as the center of the early transmission Covid19. One of the publications from China indicate that the prevalence of mental problems in health workers who handle patients Covid19 is very high. Health workers experience mental problems ranging from mild level such as irritability, fear, panic, anxiety to mental issues of weight such as insomnia, depression, and distress weight (9-11). The author also highlights that female nurses on duty at installations that have a high risk for physical contact with the patient such as the Emergency Room (ER) to the Installation of Outpatient (IRJ) is having mental problems more severe than other health professionals (3,12).

Studies conducted in the Country of China and the country of Italy added that not only anxiety, insomnia, and depression experienced by health workers. but Besides that, the health workers are also experiencing somatization even mental problems such

severe obsessive compulsive symptoms and post-traumatic stress syndrome due to the difficulty of the work safely during the pandemic Covid19. This can be caused because of the lack of understanding about the virus, knowledge about the prevention and control of disease, working hours is longer, exposed to direct patient Covid19, lack of personal protective equipment, and lack of time off. The authors also identify that health personnel work during a pandemic Covid19 experiencing anxiety, disrupted social, feel lonely, experience domestic abuse, and conflict in the family. And even a higher risk can occur mainly on the health workers who have a history of degenerative disease and the time of work overload or overwork, female, and live in rural areas (3,13-14). However, the mental disorders that occur in health workers in the country of China including mild mental disorders most of which occur in health workers men of advanced age. A third study conducted in the Chinese state that has limitations because of the absence of follow-up and no comparison group so it is not able to compare symptoms of mental disorders that happened a long time ago or the symptoms of mental disorders that have recently occurred due to the pandemic Covid19 (15).

The eight studies contained in the table (Table 1) indicates that there are many variables that affect the mental health of health workers in the pandemic Covid19 (3,5,9,13,15–18). A general overview of the prevalence of symptoms of mental disorders that occur in health workers in the pandemic Covid19 that exist the symptoms of depression, anxiety, insomnia, and distress. In addition also the occurrence of the symptoms of the interpersonal sensitivity of health care personnel who are exposed to direct patient Covid19. The rate of mental health disorders varied from below the critical point up to the weight, this disorder is more weight on the most medical health, working on the front line or the environment at risk any contact with the patient Covid19, as well as Health workers who undergo quarantine (3,9,13,15,17).

Based on population, gender women, nurse, office work is low, the educational background is low and long to work which is short of health personnel also indicate a psychological disorder and / or depression is high, and vice versa (5,13,16). The results of other Studies also indicated that doctors and Health professionals in position in the sphere of prevention and control of Covid19 has the score of the sense of isolation is high and social support is low compared to the staff of medical technicians and not on the position within the scope of the prevention and control of Covid19 (18). In addition, health Personnel without the experience of care

public health emergency shows performance is worse in mental health compared with health workers who have experience of care public health emergency, for example the experience when on the pandemic SARS was (16-17). During the pandemic Covid19, health workers attempted to access the material psychologically from a variety of sources as well as follow counseling or psychotherapy and crisis management as coping mechanisms (5,13).

The Management of the Mental Health of Health Workers

Literature sources publications from various different countries with geographical diversity, among other countries China, the United Kingdom, and the United States discuss about the strategy of management problems at health professionals who focus on the individual. The resilience of individuals during a pandemic Covid19 can be built from self-care, self-efficacy, and build social connections (19-20). Support psychic that can be given on an individual can be a technique of mindfulness, active listening, music therapy, internal counselling and problem solving, as well as the adoption of the attitude of altruism as health workers (6,21). The author states that required an intervention in the form of peer support models (Battle Buddies) for handle exposure to stress be health by facilitating social support from colleagues and peers and facilitate referral to health facilities for advanced interference occurs when the weight. The results of modeling the Battle Buddy System this indicates that the intervention is very easily implemented and very beneficial in addressing the issue of mental health workers in the United States, but need to be tested at the advanced level, namely the level of the department (20). Another study in Wuhan, China showed that health workers who have been given the material a psychological form of manual handling mental health and psychological counseling through the online program for 24 hours showed a positive response, can reduce the mental problems, and improve the perception of their physical health (5,22).

Different with the above studies, some studies stated that the interventions and strategies of mental problems in the health workforce is not only done at the individual level that needs to be done of the party leaders and the organization (7,23). The leadership of the organization needs to provide leadership that is clear, honest, and open communication to all staff and members to reduce the fear and uncertainty caused by the pandemic Covid19 (2,24). Strategy is another intervention that can be done at the organizational level to deal with the impact of psychic due to the pandemic Covid19, among others, provide the resources adequate

Table 1. Literature Review

Name of Researcher	Title	Sample	Method	Instrumen	Result	Conclusion
Rossi, <i>et al.</i> (3).	Mental Health Outcomes among Frontline and Second-Line Health Care Workers during the Coronavirus Disease 2019 (COVID-19) Pandemic	Health Workers (n= 1379)	Cross sectional, web based study	Italian version of the Global Psychotrauma Screen (GPS), the 9-item Patient Health Questionnaire (PHQ-9), the 7-item Generalized Anxiety Disorder scale (GAD-7), the 7-item Insomnia Severity Index (ISI), dan the 10-item Perceived Stress Scale (PSS).	49,38% of health workers are experiencing PTSS; 24,7% experienced depression, 19,8% had anxiety, to 8.27% had insomnia, and 21,90% experienced severe stress.	Health workers experience mental Health disorders during the pandemic Covid-19.
Kang, <i>et al.</i> (5).	Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study	Medical and nursing staff working in Wuhan (n= 994)	Studi cross sectional	Four scales to assess the mental health status of medical and nursing staff. The 9-item Patient Health Questionnaire (PHQ-9), the 7-item Generalized Anxiety Disorder (GAD-7), the 7-item Insomnia Severity Index (ISI) and the 22-item impact of Event Scale-Revised (IES R) were used to evaluate depression, anxiety, insomnia and distress, respectively.	36,9% of Health Workers are experiencing mental Health disorders below the critical point, of 34.4% had mild disturbances, of 22.4% impaired moderate, and 6.2% had severe disorders experienced since the epidemic Covid-19. Health workers access the material psychological (36,3%), the source of psychological information from the media (50,4%), as well as attend counseling or psychotherapy (to 17.5%).	Mental Health disorders occur in Health workers in various level. The majority of Health workers accessing mental Health services that are available.
Lai, <i>et al.</i> (9).	Factors associated with mental health outcomes among health care workers exposed to Coronavirus Disease 2019	Health personnel in 34 hospitals (n= 1257)	Cross-sectional, based on the survey	Chinese versions of the 9-item Patient Health Questionnaire, the 7-item Generalized Anxiety Disorder scale, the 7-item Insomnia Severity Index, dan the 22-item Impact of Event Scale-Revised	50,4% had symptoms of depression, to 44.6% experienced anxiety, 34% had insomnia, and 71,5% experienced distress. Nurse, female gender, Health professionals in position in the scope of the work environment prevention and control of Covid-19, and work in Wuhan, China, shows the degree of severity is higher on the measurement of all symptoms mental health of other health workers (p< 0.05)	Nurse, women, especially those who work in Wuhan, and directly involved in the diagnosis, treatment, and patient care Covid-19 indicate the presence of a psychological disorder that is heavy.
Zhang, <i>et al.</i> (13).	Mental health and psychosocial problems of medical health workers during the Covid-19 epidemic in China	Medical personnel (n= 927) and Health care Workers nonmedical (n= 1255)	Cross-sectional, Survey online	Insomnia Severity Index (ISI), the Symptom Check List-revised (SCL-90-R), dan the Patient Health Questionnaire-4 (PHQ-4)	Medical personnel have a higher prevalence in the insomnia (of 38.4 vs. 30,5%), anxiety (13,0 vs. Of 8.5%), depression (12,2 vs. To 9.5%), somatization (1,6 vs. 0.4%), and symptoms of obsessive-compulsif (5,3 vs. 2.2%) compared with Health professionals nonmedical (p< 0.05). The female gender, and risky contact with the patient COVID-19 is a factor of risk of occurrence of insomnia, anxiety, depression, somatisaso, and the symptoms of obsessive-compulsif (p< 0.05).	During the plague COVID-19, the most medical health experience the problem of psychosocial risk factors that influence it, so it requires attention and recovery program.
Sun, <i>et al.</i> (15).	Psychological impact of 2019 novel coronavirus (2019-nCoV) outbreak in health workers in China	Health workers (n= 442); it consists of 53 doctors, 348 nurses, 18 staff administration and logistics, and 23 other health	Cross-sectional, questionnaire system electronic	The 2019-nCoV impact questionnaire and The Impact of Event Scale (IES)	Health workers undergo quarantine has a score of IES is higher than that is not a quarantine (p< 0.05)	Health workers quarantined in need of attention and counseling services psychological more adequate.

Name of Researcher	Title	Sample	Method	Instrumen	Result	Conclusion
Xiao, <i>et al.</i> (16).	Psychological impact of healthcare workers in China during COVID-19 pneumonia epidemic: A multi-center cross-sectional survey investigation	Health workers (n= 958)	multi-center cross-sectional survey	Perceived Stress Scale (PSS-14) and Hospital Anxiety / Depression scale (HAD).	55,1% of health workers are experiencing psychological stress that is higher than Health professionals who have experience working for SARS. The 54,2% and 58% of health workers are experiencing symptoms of anxiety and depression. Stress levels of health workers different based on position in the work and long work experience	P a n d e m i c C O V I D - 1 9 increase the stress levels of health workers, especially anxiety and depression. The situation of mental Health of health workers is alarming and intervention services psychological is needed.
Cai, <i>et al.</i> (17).	A cross-sectional study on mental health among health care workers during the outbreak of Corona Virus Disease 2019	Health workers (n= 1521)	Studi cross-sectional	Symptom Check-List-90 (SCL-90), Chinese version of Connor-Davidson resilience scale (CD-RISC) and Social Support Rating Scale (SSRS).	As many as 1521 health workers, of which 147 have the experience of a public health emergency, while 1374 does not show that experience. Health workers without care experience public health emergency shows bad performance in the mental health, resilience and social support, and tend to experience a psychological disorder in interpersonal sensitivity and anxiety.	Training and professional experience, high resilience and social support required health workers who first participate in a public health emergency.
Fang, <i>et al.</i> (18).	Analysis on mental health status and needs of health care workers in designated medical institutions of tuberculosis during the epidemic period of COVID-19	511 health workers	Survey	Perceived Social support scale (PSSS), Self-rating Depression scale (SDS), ULCA loneliness scale	27,20% of Health workers are in a position in the scope of the work environment prevention and control of Covid-19. The level of depression, scores feeling isolated, and social support differ significantly on several variables based on gender, occupation, position in employment, Educational background, and scope of the work environment (p< 0.05). The score of social support negatively correlated with depression and sense of isolation (P < 0.001), while depression was positively correlated with the sense of isolation (P < 0.001).	Psychological problems of health workers, especially women, a nurse with a background of low education, a professional position that low, and staff in positions in scope of prevention and control of Covid-19 is relatively serious. This population requires attention to the steps of the intervention that is adequate.

for the handling of patients Covid19, provides a guide to triage the handling of cases according to priority and handling problems, the addition of health workers and administrative staff, providing a forum for discussion, the reduction of criticism of the performance of staff and health workers, and the formation of a team of psychologists to deal with mental problems on health workers (4,8,25). Literature other demonstrate intervention strategies that health workers do not require psychological intervention specifically in dealing with anxiety and psychological problems other during the pandemic Covid19 health professionals tend to be reluctant to participate in the service of psychological intervention individual or group and does not need a psychologist. However, the thing that is most needed by health workers to maintain his mental health is adequate rest without interruption, the resources and tools to protect themselves from the virus

Covid-9 and training to deal with psychological problems that occurred during the pandemic Covid19 (26).

The effort of handling mental health other health workers who have been applied based on literature (23,27–35) which are: (1) social Support post-trauma and stressors (primary for example, the death of work colleagues or a secondary such as labor relations or the difficulty of the work) which is experienced during recovery is the most powerful risk factors predict status of mental health long-term; and (2) manager Support to increase better mental health. Furthermore, there are four key elements in recovery plans mental health staff evidence-based, namely: (1) Grateful, whether written or oral, which recognizes the challenging work that is done, can foster the resilience of the individual. (2) job Interview by the supervisor about mental health. This interview allows a better understanding of the

experience of members of staff, while identifying the stressors secondary to collaboratively design a plan of recovery individual. (3) active Monitoring for anyone exposed to a traumatic event, particularly the individuals who are considered at risk of developing mental health problems. (4) Discussion groups to help staff develop the narrative means that reduce the risk of danger. Other interventions that can be performed during the pandemic which proved to be more effective, namely: (1) Self-help interventions, because such interventions can be delivered through a variety of media, and self-help has been proven to be effective for a variety of mental health problems. (2) Intervention self-help evidence-based so-called Self-Help Plus (SH +) to manage stress and overcome various difficulties.

So far, evidence-based intervention has been done a lot but there are some barriers that exist because of the way that used using conventional methods in addressing health issues mental health workers during a pandemic Covid19 this. These obstacles include: (1) Psychotherapy traditional face-to-face difficult to apply because the policy quarantine to minimize transmission of the virus. (2) Not all healthcare workers willing to participate in the psychological intervention group or the individual. (3) In general, the targeting of mental disorders single, whereas today most of the population experienced a series of response to psychological and mental disorders in the face of a pandemic Covid19. (4) Covid19 has been spread to all over the world including many low and middle income countries (LMICs) that cause a significant impact on the gap in access to mental health services, so that evidence-based intervention in general in low and middle income countries need mental health resources are substantial (23,27).

Based on the results of the literature review that has been done, the efforts of the management of mental health on health workers as the frontline in handling pandemic Covid19 this can be mapped to 3 levels of management i.e. the level of intrapersonal, interpersonal, and management level. The level of interpersonal that can be done is self-care, self-efficacy, and build social connections. The level of intrapersonal that can be done is peer support models (Battle Buddies). The Level of management that can be done is to increase the role of the leadership of the organization of the workplace to have good leadership and communication skills in handling the mental health of the staff.

CONCLUSION

Medical workers in the health service has a very high risk to experience mental health problems during

the pandemic Covid19 start from the level of light such as irritability, fear, panic, anxiety to mental issues of weight such as insomnia, depression, and distress weight. The efforts of the management of the mental health of health workers this can be done by implementing interventions Self-Help Plus (SH +) with the full support of leaders in every health care facility in carrying out the activities of stress management in the workplace, so that the mental health of health workers during the pandemic can remain stable.

REFERENCES

1. World Health Organization. Coronavirus disease (Covid19) Weekly Epidemiological Update and Weekly Operational Update. Geneva: World Health Organization; 2020 <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>
2. Blake H, Bermingham F, Johnson G, Tabner A. Mitigating The Psychological Impact of Covid19 on Healthcare Workers: A Digital Learning Package. *Int J Environ Res Public Health*. 2020;17(9):1-15. <https://doi.org/10.3390/ijerph17092997>
3. Rossi R, Soggi V, Pacitti F, Lorenzo G, Marco A, Siracusano A, et al. Mental Health Outcomes Among Frontline and Second-Line Health Care Workers During the Coronavirus Disease 2019 (Covid19) Pandemic in Italy. *JAMA Network open*. 2020;3(5):1-4. <https://doi.org/10.1001/jamanetworkopen.2020.10185>
4. Ornell F, Halpern SC, Paim Kessler FH, Magalhães NJC. The Impact of The Covid19 Pandemic On The Mental Health of Healthcare Professionals. *Cad Saude Publica*. 2020;36(4):1-6. <https://doi.org/10.1590/0102-311x00063520>
5. Kang L, Ma S, Chen M, Yang J, Wang Y, Li R, et al. Impact on Mental Health and Perceptions Of Psychological Care Among Medical And Nursing Staff In Wuhan During The 2019 Novel Coronavirus Disease Outbreak : A Cross-Sectional Study. *Brain, Behavior, Immun*. 2020;87(1):11-17. <https://doi.org/10.1016/j.bbi.2020.03.028>
6. Wu PE, Styra R, Gold WL. Mitigating the Psychological Effects of Covid19 on Health Care Workers. *Cmaj*. 2020;192(17):459-460. <https://doi.org/10.1503/cmaj.200519>
7. Dewey C, Hingle S, Goelz E, Linzer M. Supporting Clinicians During the Covid19 Pandemic. *Ann Intern Med*. 2020;1(3):767-769. <https://doi.org/10.7326/M20-1033>
8. Grover S, Dua D, Sahoo S, Mehra A, Nehra R. Why all Covid19 Hospitals Should Have Mental Health Professionals : The Importance of Mental Health in a Worldwide Crisis. *Asian J Psychiatr*. 2020;51(1):1021-1047. <https://doi.org/10.7326/M20-1033>
9. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed

- to Coronavirus Disease 2019. *JAMA Netw open.* 2020;3(3):1-12. <https://doi.org/10.1001/jamanetworkopen.2020.3976>
10. Ni MY, Yang L, Leung CMC, Li N, Yao XI, Wang Y, et al. Mental Health, Risk Factors, and Social Media Use During the Covid19 Epidemic and Cordon Sanitaire Among the Community and Health Professionals in Wuhan, China: Cross-Sectional Survey. *JMIR Ment Heal.* 2020;7(5):1-16. <https://doi.org/10.2196/19009>
 11. Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, et al. Work Stress Among Chinese Nurses To Support Wuhan In Fighting Against Covid19 Epidemic. *J Nurs Manag.* 2020;(3):1-8. <https://doi.org/10.1111/jonm.13014>
 12. Que J, Shi L, Deng J, Liu J, Zhang L, Wu S, et al. Psychological Impact Of The Covid19 Pandemic On Healthcare Workers: A Cross-Sectional Study In China. *Gen Psychiatry.* 2020;33(3):1-12. <https://doi.org/10.1136/gpsych-2020-100259>
 13. Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, et al. Mental Health and Psychosocial Problems of Medical Health Workers during the Covid19 Epidemic in China. *Psychother Psychosom.* 2020;89(4):242-250. <https://doi.org/10.1159/000507639>
 14. Johnson S, Dalton-Locke C, Juan NVS, Foye U, Oram S, Papamichail A, et al. Impact On Mental Health Care And On Mental Health Service Users Of The Covid19 Pandemic: A Mixed Methods Survey of UK Mental Health Care Staff. *Social Psychiatry and Psychiatric Epidemiology.* 2020;8(2):1-13. <https://doi.org/10.1007/s00127-020-01927-4>
 15. Sun D, Yang D, Li Y, Zhou J, Wang W, Wang Q, et al. Psychological Impact Of 2019 Novel Coronavirus (2019-Ncov) Outbreak In Health Workers In China. *Epidemiol Infect.* 2020;1(4):1-6. <https://doi.org/10.1017/S0950268820001090>
 16. Xiao X, Zhu X, Fu S, Hu Y, Li X, Xiao J. Psychological Impact Of Healthcare Workers In China During Covid19 Pneumonia Epidemic: A Multi-Center Cross-Sectional Survey Investigation. *J Affect Disord.* 2020;274(5):405-410. <https://doi.org/10.1016/j.jad.2020.05.081>
 17. Cai W, Lian B, Song X, Hou T, Deng G, Li H. A Cross-Sectional Study On Mental Health Among Health Care Workers During The Outbreak of Corona Virus Disease 2019. *Asian J Psychiatr.* 2020;51(3):102111. <https://doi.org/10.1016/j.ajp.2020.102111>
 18. Fang XH, Wu L, Lu LS, Kan XH, Wang H, Xiong YJ, et al. Analysis on Mental Health Status and Needs of Health Care Workers In Designated Medical Institutions of Tuberculosis During The Epidemic Period of Covid19. *Eur PMC.* 2020;1(4):1-16. <https://doi.org/10.21203/rs.3.rs-25934/v1>
 19. Albott CS, Wozniak JR, McGlinch BP, Wall MH, Gold BS, Vinogradov S. Battle Buddies: Rapid Deployment of A Psychological Resilience Intervention for Health Care Workers During the Covid19 Pandemic. *Anesth Analg.* 2020;131(1):43-54. <https://doi.org/10.1213/ANE.0000000000004912>
 20. Cheng P, Xia G, Pang P, Wu B, Jiang W, Li YT, et al. Covid19 Epidemic Peer Support and Crisis Intervention Via Social Media. *Community Ment Health J.* 2020;56(5):786-792. <https://doi.org/10.1007/s10597-020-00624-55>
 21. Liu S, Yang L, Zhang C, Xiang Y-T, Liu Z, Hu S, et al. Online Mental Health Services In China During The Covid19 Outbreak. *Lancet.* 2020;7(4):19-21. [https://doi.org/10.1016/S2215-0366\(20\)30077-8](https://doi.org/10.1016/S2215-0366(20)30077-8)
 22. Hou T, Zhang T, Cai W, Song X, Chen A, Deng G, et al. Social Support And Mental Health Among Health Care Workers During Coronavirus Disease 2019 Outbreak: A Moderated Mediation Model. *PLoS One.* 2020;15(5):1-14. <http://dx.doi.org/10.1371/journal.pone.0233831>
 23. Greenberg N, Docherty M, Gnanapragasam S, Wessely S. Managing Mental Health Challenges Faced By Healthcare Workers During Covid19 Pandemic. *BMJ.* 2020;368(3):1-4. <http://dx.doi.org/doi:10.1136/bmj.m1211>
 24. Cole CL, Waterman S, Stott J, Saunders R, Buckman JEJ, Pilling S, et al. Adapting IAPT Services to Support Frontline NHS Staff during the Covid19 Pandemic: The Homerton Covid Psychological Support (HCPS) Pathway. *Cognitive Behav Ther.* 2020;13(e12):1-12. <https://doi.org/10.1017/S1754470X20000148>
 25. Shah K, Chaudhari G, Kamrai D, Lail A, Patel RS. How Essential Is to Focus on Physician's Health and Burnout in Coronavirus (Covid19) Pandemic? *Cureus.* 2020;12(4):10-12. <https://doi.org/10.7759/cureus.7538>
 26. Chen Q, Liang M, Li Y, Guo J, Fei D, Wang L, et al. Mental Health Care For Medical Staff In China During The Covid19 Outbreak. *The Lancet Psychiatry.* 2020;7(4):15-16. [https://doi.org/10.1016/S2215-0366\(20\)30078-X](https://doi.org/10.1016/S2215-0366(20)30078-X)
 27. Yang L, Yin J, Wang D, Rahman A, Li X. Urgent Need To Develop Evidence-Based Self-Help Interventions For Mental Health Of Healthcare Workers In Covid19 Pandemic. *Psychol Med.* 2020;1-2. <https://doi.org/10.1017/S0033291720001385>
 28. Greenberg N. Mental Health of Health-Care Workers in the Covid19 era. *Nat Rev Nephrol.* 2020;16(1):425-426. <https://doi.org/10.1038/s41581-020-0314-5>
 29. Galbraith N, Boyda D, McFeeters D, Hassan T. The Mental Health Of Doctors During The Covid19 Pandemic. *BJPsych Bull.* 2020;1:1-4. <https://doi.org/10.1192/bjb.2020.44>
 30. Rana W, Mukhtar S. Mental Health Of Medical Workers In Pakistan During The Pandemic COVID-19 Outbreak. *Asian J Psychiatr.* 2020;51(1):19-21. <https://doi.org/10.1016/j.ajp.2020.102080>
 31. Maben J, Bridges J. Covid19: Supporting Nurses' Psychological And Mental Health. *J Clin Nurs.* 2020;(4):1-9. <https://doi.org/10.1111/jocn.15307>

32. Goldfield NI, Crittenden R, Fox D, McDonough J, Nichols L, Lee Rosenthal E. Covid19 Crisis Creates Opportunities for Community-Centered Population Health: Community Health Workers at the Center. *J Ambul Care Manage.* 2020;43(3):184–190. <https://doi.org/10.1097/JAC.0000000000000337>
33. Lin K, Yang BX, Luo D, Liu Q, Ma S, Huang R, et al. The Mental Health Effects of Covid19 on Health Care Providers in China. *Am J Psychiatry.* 2020;177(7):635–636. <https://doi.org/10.1097/JAC.0000000000000337>
34. Zaka A, Shamloo SE, Fiorente P, Tafuri A. Covid19 Pandemic As A Watershed Moment: A Call For Systematic Psychological Health Care For Frontline Medical Staff. *J Health Psychol.* 2020;25(7):883–7. <https://doi.org/10.1016/j.ajp.2020.102229>
35. Lu W, Wang H, Lin Y, Li L. Psychological Status Of Medical Workforce During The Covid19 Pandemic: A Cross-Sectional Study. *Psychiatry Res.* 2020;288(4):1–5. <https://doi.org/10.1177/1359105320925148>

