

HEALTH AND SAFETY PRACTICES DURING COVID 19: HOW TO ENSURE WORKPLACE ENVIRONMENT SAFETY AND HEALTH

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Submitted: 09-04-2021, Reviewer: 22-04-2021, Accepted: 24-05-2021

ABSTRACT

The COVID 19 pandemic is a challenge in various sectors in the world, one of which is the workplace. The large population of workers in the workplace which can lead to clusters of the spread of COVID-19, requires workplaces to be able to ensure that workers are healthy and safe. This is done to break the chain of spreading COVID-19. Various efforts that have been made by workplaces in various countries were reviewed based on searches through ScienceDirect, Springer, and Google Scholar which were adapted to research questions. COVID-19 has an impact on economic and business instability at the beginning of the pandemic, which is a challenge for the workplace to be able to adapt to these changes. Work from home is one effort that can be done, but not all jobs can be done at home. The workplace makes various efforts so that workers are healthy and safe, including the provision of personal protective equipment, a safe working distance of about 2 meters, workplace disinfection, engineering, redesign of work stations, development of digital technology, administrative control with work shifts, workload adjustment and various trainings that can be done, one of which is psychological support for workers. Every workplace has a challenge to break the chain of the spread of COVID-19, so a control program must be implemented optimally to ensure workers are safe and secure.

Keywords: *workplaces, health and safety practice, COVID-19*

ABSTRAK

Pandemi COVID 19 menjadi tantangan di berbagai sektor di dunia, salah satunya dunia kerja. Banyaknya populasi pekerja di tempat kerja yang dapat menyebabkan cluster penyebaran COVID-19, sehingga membutuhkan tempat kerja yang dapat memastikan pekerja dalam keadaan sehat dan aman. Hal tersebut dilakukan untuk memutus mata rantai penyebaran COVID-19. Berbagai upaya yang telah dilakukan oleh tempat kerja di berbagai negara ditinjau berdasarkan penelusuran melalui ScienceDirect, Springer, dan Google Scholar yang disesuaikan dengan pertanyaan penelitian. COVID-19 berdampak pada ketidakstabilan ekonomi dan bisnis di awal pandemi, yang menjadi tantangan bagi dunia kerja untuk dapat beradaptasi dengan perubahan tersebut. Bekerja dari rumah merupakan salah satu upaya yang bisa dilakukan, namun tidak semua pekerjaan bisa dilakukan di rumah. Tempat kerja melakukan berbagai upaya agar pekerja sehat dan selamat, antara lain penyediaan alat pelindung diri, jarak kerja aman sekitar 2 meter, desinfeksi tempat kerja, rekayasa dan desain ulang stasiun kerja, pengembangan teknologi digital, pengendalian administrasi dengan shift kerja, penyesuaian beban kerja dan berbagai pelatihan yang bisa dilakukan, salah satunya dukungan psikologis bagi pekerja. Setiap tempat kerja memiliki tantangan untuk memutus mata rantai penyebaran COVID-19, sehingga program pengendalian harus dilaksanakan secara optimal untuk memastikan pekerja selamat dan terjamin.

Kata kunci: *tempat kerja, praktik kesehatan dan keselamatan kerja, COVID-19*

INTRODUCTION

On January 30 2020, the World Health Organization (WHO) declared the severe acute respiratory syndrome

coronavirus 2 ,(SARS-CoV-2) outbreak a public health emergency of international concern (WHO, 2020a). Human-to-human transmission of SARS-CoV-2 can occur via

respiratory droplets produced by infected individuals when coughing, breathing, talking, sneezing, singing (CDC, 2020a). Patients may present fever and flu-like symptoms, and some may not experience any symptoms (Wong et al., 2020). On March 11 2020, WHO declared the COVID 10 outbreak as a pandemic, and it is a serious concern for public and occupational health (WHO, 2020). Evidence highlighted social mobilization plays a significant in the infectious disease spread. (Gillespie et al., 2016)

In order to mitigate the rapid spread of COVID-19 through international contact and outbreak at local community, many jurisdictions have implemented policy interventions and public health measures to minimize the spread of COVID-19 (Wong et al., 2020). The guidance to stop the spread of the virus has focused on face masks, face coverings, physical distancing, hand hygiene, surface disinfection, especially in areas with significant community-based transmission (CDC, 2020).

The WHO has provided a series of guidelines for protection for both health workers and non-health workers. For non-health workplaces, six themes were suggested to ensure workplace safety during the COVID-19 outbreak, including: (1) facility cleaning, (2) hand-washing, (3) respiratory hygiene, (4) national travel advice, (5) communicating and promoting the message "stay at home even if have just mild flu-like symptoms or low-grade fever" and (6) meetings and event arrangements.

Engineering controls to prevent the transmission of COVID 19 include separation, local exhaust ventilation to protect against droplet and aerosol dissemination, and ultraviolet germicidal irradiation, which is effective at inactivating pathogens on the surface and in the air (OSHA 2020, CDC 2020b, Nardell, 2016). However, HVAC systems can distribute viable SARS-CoV-2 containing aerosols leading to exposure through surfaces and air (William et al., 2020).

SARS-CoV-2 RNA has been founded in air samples within room used HVAC supply and exhaust grills in patient rooms, patient restrooms, and restaurant (Ding et al., 2020)

A transparent barrier to protect between worker and customer is widely used to reduce the risk of transmission, but the effectiveness has not been evaluated to prevent respiratory infection. Many workers use face shields which can reduce exposure to larger aerosol particles from simulated cough, especially at close range, but the effectiveness of face shields is much less for smaller particles (William et al., 2020) To ensure their employee's safety and to minimize the spread of COVID 19, companies had to close. Many companies have had to adapt very quickly to ensure business continuity and productivity during the pandemic. Work from home or virtual work at home has become more acceptable, practical, and safer for the employee. Both companies and employees had no choice but to adapt very quickly to that situation.

METHOD

This article is a literature review article using a non-systematic review method. The data collection process was carried out by obtaining articles relevant to the research objectives in the ScienceDirect, Springer, and Google Scholar databases. The keywords used include "occupational health during the Covid-19 pandemic" or "occupational safety during the Covid-19 pandemic." Next is the selection process carried out by selecting articles that match the objectives and research criteria. Inclusion criteria in the search for articles This is an open access article in the form of original articles published in December 2019 to February 2021, available in full text in both English and Indonesian. After the search process, 11 articles that match the research objectives were selected. The results of this non-systematic review analysis are described in Table form matrix literature review in Table 1. Result synthesis is carried out by comparing the results of published studies.

RESULTS AND DISCUSSION

The results of the synthesis of several literatures on efforts to provide a healthy and safe work environment during the Covid-19 pandemic are presented in Table 1.

The Effects of COVID-19 at The Workplace

COVID-19 has become worried and affected many sectors around the globe, especially the workplace. When COVID 19 outbreak started spreading across the world, the death rates increased, and the only way to stop the spread was to reduce all the social and economic activities. This condition led many countries to impose a complete lockdown and cause all business activities to stopped entirely. COVID-19 pandemic disruption in business, such as the permanent shutdown of many companies, cannot bear the financial loss (Kaushik, 2020). Workplace face strategic decisions concerning both their balancing of employee and public health and safety and operation cost commitments to COVID 19 transmission prevention (Parker, 2020)

Companies are trying to run offices and administration jobs through Work from Home (Kaushik, 2020). However, not all companies can let the employees work from home. There are many sectors in industries that still need the employee to work in the office. Almost all working people were stressed in the workplace and worried about being infected and infecting their families with COVID-19 (Wong et al., 2020). Health care worker declared to feel psychologically not safe and believed to have been the source of infection for a work colleague and family members (Felice et al., 2020)

COVID 19 also made a habit of the working people are changed. They always wash their hands before meals and after toileting, wear a face mask, avoid going outside their homes, and contact their neighbors (Wong et al., 2020). Many people like to stay at home with their families at the

beginning of the pandemic. But there also people that can not obey the government rule and still go to the workplace, especially at the informal workplace.

Workplace Safety Requirement During COVID-19

Adapting to the new normal on returning to work, workstation had to be rearranged especially the recommendation to work at a safe distance of two meters apart, and the use of personal protective equipment such as face mask, face shield, gloves as well as the use of hand sanitizers (Hamilton, 2020). Return to work strategy implementation to stop the spreading of COVID 19 has both economic and public health planning consequences.

Many countries have their regulation to fight the COVID-19, and the companies must follow that regulation. There are many requirements for the workplace to ensure the health and safety of its employees. The Ministry of Employment and Labor in South Korea developed workplace guidelines for COVID-19 consisting of social distancing, flexible working schedules, early identification of workers with suspected infections, and workplace disinfection. The workplace social distancing policy with timely implementation of specific guidelines was a key to preventing a large outbreak of COVID-19 in Korean workplaces. However, sporadic incidents of COVID-19 are still ongoing, and risk assessment in vulnerable workplaces should be continued (Kim, 2020).

Workplace guidelines in non-health-care settings are equally important as those in health-care settings due to the large proportion of the labor force, which may increase the risk of spreading the disease in the community. The worker expressed not having any confidence in the government's policy to manage the COVID 19. Many respondents reported that their workplace was significantly lower to provide personal protective equipment such as face masks (Wong et al., 2020). Another study showed

that most respondents (77%) confirmed that PPE was readily available at the workplace, but only 22% considered PPE adequate for quality and quantity (Felice et al., 2020).

The availability of PPE is a must, especially for health care workers. The proper use of personal protective equipment is very crucial during this pandemic. The only barrier standing between health care workers and COVID-19 is the PPE. In-depth training in PPE handling is vital to develop the essential skill and awareness among health care workers in the pandemic situation (Ojha et al., 2021).

Another strategy to maximize the use of PPE is the PPE helper program that was developed at a Large London hospital group to counteract suboptimal PPE practice. The program provided PPE support, advice, and staff education. Staff exposed to a PPE helper reported more positive knowledge and attitudes towards PPE, including confidence in the use of PPE, satisfaction with the availability and visibility of PPE in clinical areas, and less anxiety around PPE and the burden of COVID-19-related work on staff (Castro-Sánchez et al., 2021)

A study conducted by Dennerlein et al., 2020 aims to recommend an integrated Total Worker Health (TWH) approach that embraces core human factors and ergonomic principles, supporting worker safety, health, and well-being during the COVID 19 pandemic. The researchers adapted the six framework's key characteristics; focusing on working conditions for infection control and supportive environments for increased psychological demands; utilizing participatory approaches involving workers in identifying daily challenges and unique solutions; employing comprehensive and collaborative efforts to increase system efficiencies; committing as leaders to supporting workers through action and communications; adhering to ethical and legal standards; and using data to guide actions and evaluate progress. This recommendation helps managers

systematically organize and protect themselves, essential workers, and the public during the COVID-19 pandemic (Dennerlein et al., 2020).

Another study conducted by Wong, suggest requirement for workplace during COVID 19, there are promotion of stress management, home office with technological support, policy to reduce social distancing, providing guideline for wearing protective measures and supply of protective measures, and rescheduling workload and timeliness of deliverables (Wong et al., 2020). Almost all health care workers believe that psychological support is helpful during COVID-19 emergencies (Felice et al., 2020).

Relevant to the study conducted by Liu et al., 2021 that some effective measures such as hand hygiene, wearing surgical masks in and around the hospital, reasonable use of goggles/face screens, raising awareness of protective measures, minimizing the number of elective operations, strengthening training as well as many other control measures were instrumental in reducing occupational exposure.

Engineering control is one method to minimize the spread of COVID 19, such as a healthy environment that can cover air circulation, lighting, and humidity (Cita, 2020). The ergonomic design of the workplace can facilitate employees to keep their job performance. The recommendation for physical distancing between office staff poses a significant challenge to office design and floor space configuration (Parker, 2020). The appropriate workspace layout and equipment placement can keep physical distancing easier to implement. By obeying the workspace area requirement, it can minimize the probability of spreading illness (Cita, 2020).

Another method is to develop the technologies. A study conducted by Atif et al., 2020 suggests digital technologies for companies to collect, transfer, store, analyze, monitor, predict and visualize the

COVID 19 related data for decision making. To ensure mineworkers safety, digital technologies can use combined with the availability of personal protective equipment to prevent the spread of infectious and viral diseases in the mining workplace. Innovative digital technologies developed in their study are smart personal protective equipment, disinfection tunnel, intelligent camera system, visual health analytics dashboard, and cloud data server (Atif et al., 2020).

Administration control to fight the COVID-19 is organizing the employees. The workplace should consider collecting the staff into smaller teams or shifts and reduce the number of consecutive days worked (Lim et al., 2020).

CONCLUSION

COVID-19 affects many workplaces worldwide because the only way to stop the spread is by reducing social and economic activities. Work from home is a solution for workers in the pandemic era, but not all workers can work from home. Workplaces must adapt to a new normal era, so they must prepare solutions to stop the spread of COVID 19. Every workplace has its regulation and prevention to fight against COVID based on government regulation or health protocol. Management has the challenge to stop the spread of COVID 19, so they must maximize the control program to ensure their worker's safety.

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Table 1. Literature Review

Name of Researcher	Title	Sample	Method	Instrumen	Result
(Wong et al., 2020)	Workplace safety and coronavirus disease (COVID-19) pandemic: a survey of employees	1048 employees	An anonymous cross-sectional survey on an online platform questionnaire	WHO guidelines for workplace and developed based on literature review	88% (923 of 1048) were stressful in the past 7 days. Eighty-four percent of respondents (881 of 1048) reported different extents of workplace policies. Only 68% of respondents (715 of 1048) reported that their workplace supplied face masks to them.
(Kim, 2020)	Social Distancing and Public Health Guidelines at Workplaces in Korea: Responses to Coronavirus Disease-19		Daily briefings from the Korean Center for Disease Control and the Central Disaster Management Headquarters were assembled from January 20 to May 15, 2020.		By May 15, 2020, 11,018 COVID-19 cases were identified, of which 15.7% occurred in workplaces such as health-care facilities, call centers, sports clubs, coin karaoke, and nightlife destinations
(Cita Sari & Budiyanti, 2020)	Workplace Requirements in New Normal Era due to COVID-19 Pandemic: Design Criteria and Health Environment Perspectives		Develops the architecture design of the ergonomic workplace to arrange the best workplace design		Many requirements must be fulfilled to create a safety zone in the workplace, such as workspace layout, ventilation, lighting, the establishment of equipment, and thermal comfort.
(Dennerlein et al., 2020)	An Integrative Total Worker Health Framework for Keeping		Reviewed workplace requirements and recommendatio	Adapted from WHO, NIOSH, and other public health, worker safety, and	A successful systems approach grounded in TWH that integrates worker safety, health, and well-being into an organization includes six key characteristics: focusing on working conditions, utilizing participatory approaches, employing comprehensive

Name of Researcher	Title	Sample	Method	Instrumen	Result
	Workers Safe and Healthy During the COVID-19 Pandemic		ns for reducing worker's exposure to coronavirus and challenges to workers in protecting their health	health advocate organization	and collaborative strategies, commitment from leaders, adhering to ethical and legal standards, and data-driven change.
(Parker, 2020)	The COVID-19 office in transition: cost, efficiency, and the social responsibility business case		Examines publicly available document and analysis of historical office trends and emerging practice discourse during COVID 19	Published research literature and web-based reports and article	COVID-19 has induced a transition to teleworking, impending office design and configuration reversals and office working protocol re-engineering. Management strategies reflect prioritization choices between occupational health and safety versus financial returns.
(Felice et al., 2020)	Impact of COVID-19 Outbreak on Healthcare Workers in Italy: Results from a National E-Survey	527 Health Care Workers in Italy	Online closed survey via email	designed and developed by the first and senior authors (cf. & UG) using an online platform developed by the University of Bristol	298 (77%) respondents confirmed that PPE readily available at the workplace, only 64 (22%) considered PPE adequate for quality and quantity. 247 (64%) Health care workers believe that psychological support is helpful during COVID-19 emergency
(Atif et al., 2020)	The Role of Digital Technologies that Could Be Applied		Explore the application of smart digital technologies		Digital technologies provide a new generation solution that allows governments and companies to collect, transfer, store, analyze, monitor, predict and

Name of Researcher	Title	Sample	Method	Instrumen	Result
	for Prescreening in the Mining Industry During the COVID-19 Pandemic		that could be applied for detection, prescreening, and prevention of COVID-19 in the mining industry.		visualize the COVID-19 related data for better decision making.
(Ojha et al., 2021)	Knowledge of Handling the Personal Protective Equipment by Frontline Allied Health Professionals in COVID-19 OutbreakdA Web-Based Survey Study	143 frontline health care workers	A web-based survey using questionnaires		The awareness among the health care workers regarding the use of PPE is good but lacks in-depth knowledge about handling and disposal of used PPE, which is crucial in a pandemic situation such as COVID-19
(Liu et al., 2021)	Experience of comprehensive interventions in reducing occupational exposure to COVID-19	196 medical personnel with occupational exposure to COVID-19	Evaluate the occupational exposure report from Hospital Infection Control Office		196/3120 health care workers were occupationally exposed to COVID-19 before the implementation of comprehensive interventions. The occurrence of occupational exposure to COVID-19 declined to 0.19% after an extensive and comprehensive intervention program.
(Castro-Sánchez et al., 2021)	Evaluation of a personal protective equipment support program for staff during the COVID-19 pandemic in London	261 clinical and non-clinical staff	Paper and electronic questionnaire	Adapted from Theoretical Domain Framework and COM-B Model	68% of staff exposed to a PPE helper were significantly more likely to respond positively to the following statements compared with staff who had not been exposed to a PPE helper
(Lim et al., 2020)	Staff rostering, split team arrangement, social distancing (physical	Laboratory staff	A simulation model based on a discrete event		A higher rate of transmission was associated with a smaller overall staff pool (expressed as multiples of the number of staff per shift), a higher number of

Name of Researcher	Title	Sample	Method	Instrumen	Result
	distancing) and use of personal protective equipment to minimize the risk of workplace transmission during the COVID-19 pandemic: A simulation study		simulation approach was constructed to compare the transmission of SARS-CoV-2 among staff under various roster arrangements and workplace measures.		shifts per day, higher number of staff per shift, and longer consecutive days worked. Social distancing and PPE use significantly reduced the transmission rate.