

Original Article

Exposure to the risk of COVID-19 infection and productivity at the workplace among manufacturing industry workers in Rembang, Indonesia: A qualitative study

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Abstract

Introduction: This study explores the relationship between exposure to the risk of COVID-19 infection and productivity at the workplace among manufacturing industry workers in Indonesia in the context of social restrictions during the COVID-19 pandemic.

Methods: This qualitative research has a case study approach. Key informants in this study were obtained through a purposive sampling technique. They included six workers employed in the production, the Head of Health Safety Environment (HSE), the Head of General Affairs (GA), the Head of Production, and the Head of Human Resources (HR). This study used Back's risk society theory as an analytical knife.

Results and Discussion: Our findings showed the reflexivity of manufacturing industry workers in Rembang, Indonesia, during the COVID-19 pandemic, which was implemented through health protocols, including washing hands with soap and hand sanitizer, vaccination, and practicing physical distancing while working increased workers' productivity.

Keywords: reflexivity; occupational risk; Covid-19 infection; productivity.

Cite this paper as: Tinawati F, Utami T, Demartoto A. Exposure to the risk of COVID-19 infection and productivity at the workplace among manufacturing industry workers in Rembang, Indonesia: A Qualitative study. *G Ital Psicol Med Lav.* 2022;2(2):125-133.

Received: 30 November 2022; Accepted: 10 December 2022; Published: 15 December 2022

INTRODUCTION

The COVID-19 emergency has been going on for over two years since the World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020. The total number of confirmed cases of COVID-19 globally as of November 2022 has exceeded 600 million, with details in 233 countries, of which 635,709,158 have been reported, and 6,603,803 have died.

The transmission of SARS-CoV-2, the virus responsible for the COVID-19 disease, has much influence in various occupational sectors with a detrimental impact on many categories of essential workers who are at high risk of getting infected with the virus. The COVID-19 pandemic has affected many fields of our lives, such as the economy, education, tourism, social and political, and the employment sector, affecting business continuity and leading to lost productivity. Since the emergence of the COVID-19 pandemic, workers in specific sectors, such as healthcare and social sectors, have been particularly vulnerable to the risk of SARS-CoV-2 infection. According to the International Labor Organization (ILO), more than 7,000 healthcare workers died worldwide due to this outbreak. In contrast, nearly 136 million health and social care workers have contracted COVID-19 disease at the workplace [1].

Furthermore, lockdown measures, social isolation, and fear of contracting the virus have created fear and anxiety among people with mental illness and other psychological disorders and mental health consequences in healthcare workers and people affected by the severe COVID-19 disease [2]. The ILO has described this pandemic as the most severe challenge since the Second World War; it is estimated that more than 2.7 billion workers (81% of the world's workforce) have been infected with the virus. ILO estimated that in India, more than 90% of workers employed in the informal sector are at risk of falling deep into poverty due to the pandemic [3]. In Vietnam, many COVID-19 infection cases were found among essential workers employed in the industry during the first waves of the pandemic [4]. In the Republic of Korea, as of February 2021, almost 61% of new mass cluster infections were reported from workplaces with low natural ventilation rates [5]. In high-income countries like the United States, at least 17,358 cases and 91 deaths related to COVID-19 were reported among essential workers employed in the meat and poultry industries [6].

The working-age population has been particularly affected by COVID-19 in Indonesia. According to the report from the COVID-19 Handling Task Force, cases of SARS-CoV-2 infection in this group of the population reached 75.6% as of Thursday, April 7, 2022, and 26.6% of COVID-19 cases occurred in the age group 19-30 years. COVID-19 infection rates were high in Indonesian companies as most companies were constrained to operate in traditional workplaces during the pandemic. A survey from the Central Statistics Agency (BPS) showed the highest rates of COVID-19 infection cases in five Indonesian provinces and more than 20% of companies operating normally. Central Java Province was ranked third with a percentage of 55.05%. By location, most companies that complied with health protocols were in urban areas, with a rate of 91.73% compared to 83.46% in districts [7].

The workplace has a high potential for transmission of COVID-19 because it has many individuals in close spaces and increases the mobility of workers. Labour is a precious asset and is significant in moving the company's wheels through production activities. Therefore, workers must receive adequate protection in terms of health and safety to maintain their productivity. To reduce

and prevent the transmission of Covid-19 in the workplace, the ILO has established policies and regulations in terms of guidelines for the prevention and control of COVID-19 in the workplace. In Indonesia, these health and safety policies against COVID-19 transmission include a written document policy, avoiding stigmatizing and discriminatory attitudes and actions; conducting a specific occupational risk assessment process for protecting workers and clients at the workplace; training COVID-19 emergency teams at work; developing special procedures in preventing the transmission of COVID-19 in the workplace; and participating in policies for preventing COVID-19 transmission outside the workplace into the community [8].

As the WHO and ILO suggested, the Indonesian government has adopted a policy (the Minister of Health Decree number HK.01.07/MENKES/328/2020) for releasing specific guidelines for preventing and controlling COVID-19 infection within offices and industrial workplaces. These indications include establishing a COVID-19 team, hygiene, and preventive measures in the workplace, such as physical distancing rules, etc. [9-11]. Employers have implemented these preventative measures in China, Europe, and the US. For example, in the US, these measures have minimized the number of COVID-19 infections among construction industry workers [12-14]. The same strategy has been implemented in the construction industry in Malaysia, too. Overall, they are similar to hygiene measures used to reduce the spread of well-known infectious diseases, such as malaria, Ebola, and dengue fever, among workers in the construction industry [15-17].

A strategy for controlling and preventing the risk of COVID-19 transmission in this category of workers has been developed in Indonesia. Work holidays do not apply to labor-intensive companies based in Rembang, Indonesia, even though the SARS-CoV-2 pandemic has spread. Factories with many workers were constrained to continue business operations for economic reasons.

Productivity at the workplace results from work requirements that employees must meet [18,19]. An employee can be said to be productive if, within a specific time can complete the work that has been assigned. Workers' productivity is reflected in skills such as a sense of responsibility in complying with work rules and conducting work on time. Productivity may be increased through workers' enthusiasm for work and is confirmed by low absenteeism rates. There is a relationship between exposure to the risk of SARS-CoV-2 infection at the workplace and the work efficiency and productivity of the workers who fear the risk of getting infected with the virus. This study, therefore, examines the relationship between workers employed in the manufacturing industry in Rembang, Indonesia, and workers' work productivity.

METHODS

This research used case studies to explore the reflexivity of manufacturing industry workers as a risk in preventing the influence of COVID-19 infection on workers' productivity. Key informants were selected through a purposive sampling technique. Data were obtained through in-depth interviews with six workers at the "PT. Rembang Regency Indonesia Manufacturing Industry, namely the Head of HSE (Health Safety Environment), the Head of GA (General Affairs), the Head of Production, and the Head of HR (Human Resources). In this qualitative research, preliminary findings were collected through ten semi-structured interviews.

The semi-structured interviews consisted of open-ended questions organized into four main sections: 1) the Emergency response plan at the "PT. Rembang Regency" manufacturing industry to prevent the risk of exposure to COVID-19; 2) the Standard Operating Procedures (SOP) implemented; 3)

Workers' compliance in carrying out the COVID-19 emergency regulations. 4) Challenges in facing the Covid-19 pandemic situation.

The interviews were conducted using two methods: face-to-face research (FTF), where the researcher met the informants directly, and Telephony Mediated Research (TMR), led by online interviews [20].

This study used Back's risk society theory as an analytical knife. "Risk Society and Reflexivity Modernization" theory by Back is defined not just by the distribution of goods (wealth) but more so by the distribution of "bad" (pollution, contamination, and other by-products of production). These are technological hazards that, because they are produced by society, are considered preventable, a contrast with "natural" hazards, which hazard researchers have traditionally studied. Both hazards have impacts that are intensified or mitigated by social, economic, political, and cultural systems—they are both "social" in this respect. Thus, environmental health risk is considered a social construction [21].

Before starting our research, we obtained authorization from the Head of "PT. Rembang Regency Indonesia Manufacturing Industry."

RESULTS

Emergency Response Plan at "PT. Rembang Regency Manufacturing Industry" (PT)

The performance of the national manufacturing industry began to experience a significant decline in March 2020, which was marked by the weakening of the Manufacturing PMI (Purchasing Managers' Index) in the manufacturing sector from a level of 51.9 in February 2020 to 45.3 in March 2020 and plunged to its lowest level of 27.5 in April 2020. An official government statement reinforced this through the Ministry of Industry in April 2020, which stated that several manufacturing industry sectors experienced a reduced production capacity of up to 50 percent.

During the COVID-19 pandemic, the wheels of the economy must continue to run by prioritizing preventive measures. For regulations regarding the prevention and control of COVID-19 in the workplace, the Indonesian Ministry of Health has issued a Minister of Health Decree number HK.01.07/MENKES/328/2020 to support business continuity in a pandemic situation. The workplace as a locus of interaction and a gathering place for people is a risk factor that needs to be anticipated for transmission. Due to the large working population and the high mobility and interaction of the population, it is generally caused by work activities, so the business world and the active community significantly contribute to breaking the chain of transmission of the COVID-19 infection.

As a company with a large number of employees, the efforts of PT in preventing or reducing the risk of COVID-19 infection is as follows: Forming a COVID-19 Handling Team consisting of leaders, staffing department, K3 section and Health officers; At the entrance to the factory, body temperature is measured using a thermo gun, and before entering work all factory employees at PT apply the COVID-19 risk self-assessment rule to ensure that workers who will join the factory are genuinely in an uninfected condition the SARS-CoV-2 virus; The company requires all factory employees to wear masks from the time they travel to or from home and while working; The company facilitates hand washing facilities (soap and running water), which are placed in certain parts of the place such as the entrance to the production department and puts up educational posters on how to wash hands properly; The company also enforces physical distancing rules in all work activities including the activities of employees in the production section by setting tables or machines not to be too close to

each other and dividing work schedules in shifts; Finally, the company also conducts socialization and education with all workers regarding the dangers of SARS-CoV-2 infection. Socialization and education activities are carried out through announcements via speakers every day before workers start their activities.

In the context of efforts to prevent COVID-19 infection at PT, the company's joint team of professionals also observed compliance with social distancing, personal hygiene, and personal protective equipment (PPEs) among workers. In addition, the company's occupational health and safety (OHS) professionals carry out engineering controls, including increasing ventilation rates in the workplace and installing physical barriers. The company also implements high humidity and high-temperature conditions to reduce the transmission rate of COVID-19 infection.

All employees in the PT industry must obey these rules and policies. The PT industry, from the top level (director) to the lower level (production workers). This is intended to break the chain of transmission of the SARS-CoV-2 virus so that production activities run smoothly according to rules during a pandemic, according to the narrative from the Head of PT's Human Resources Development (HRD) department. At PT, if guests or employees enter the factory area, they must immediately check their body temperature. They are given masks and use hand sanitizers. This is done by the factory daily as a joint commitment with the PT's rules to fight COVID-19.

Regarding the appeal to Working from Home (WFH), the PT industry implemented the regional government's standard operating procedures (SOP).

Standard operating procedures in the PT industry

The PT industry has established the SOP, which is part of their efforts to prevent and control the spread of SARS-CoV-2 infection within the workplace. SOP are guidelines for working tasks following the government's rules based on technical, administrative, and procedural indicators. The company management designed SOP. Five types of SOPs were established, namely procedures for preventing the spread of COVID-19 infection to clients or guests, procedures for preventing the spread of disease to co-workers, those for continuing production activities during the COVID-19 pandemic, health protocols in the workplace (e.g., occupational health surveillance), and procedures for handling COVID-19 related emergency conditions.

The procedures for preventing the spread of COVID-19 infection to clients start with guests having to wear masks and wash their hands in the sink provided. Next, guests are required to fill out a medical history form and guest book. In addition, they are given an identification card provided by the security guard. Finally, they must check their body temperature through a thermo gun; the security guard prevents the client's appointment and takes the guest to the meeting to be completed.

Challenges in facing the COVID-19 pandemic

According to our key informants, the PT industry faced the same challenges as other manufacturing industries in Indonesia, including how to apply social restrictions between employees.

According to the Head of the Production Section at PT, the first challenge was the application of physical barriers among employees in the factory. According to our key informant, this could be done only by implementing a shift work schedule. However, working in rotation has reduced the number of employees working simultaneously. This preventive measure, however, can lead to a decrease in productivity. The second challenge is the increase in the price of raw and auxiliary materials due to

the impact of the global market on the supply and demand for goods from importing countries.

Employee compliance with implementing the COVID-19 protocol for the prevention of COVID-19 infection

Applying health protocols against COVID-19 at PT has been critical during the pandemic because many employee infection cases were recorded.

Based on information collected by our key informants, health protocols in the workplace were implemented, and both managers and operative workers were compliant with health protocols. Among the preventive measures, all employees measured their body temperature daily before entering the factory area, washed their hands, and used hand sanitizers. During working hours and traveling from and to home, they also wore facial masks. They also avoided crowding during lunchtime in the cafeteria and during work breaks. However, some of our informants stated about the issues of wearing facial masks due to humid heat in their working environments, with exposure to additional risks to health and safety. In addition, some of them unknowingly took off their masks during conversations with colleagues to communicate working procedures. The key informants claimed the absence of therapies or vaccines against COVID-19.

DISCUSSION

The COVID-19 pandemic is one of the social risks that has become part of our daily lives as humans, including for manufacturing industry workers. Ulrich Beck describes it as a systematic way of dealing with the dangers and insecurities caused by modernization. Beck relates this problem to widespread change, which he calls "reflexive modernization," in which modern life's unwanted and unpredictable effects occur [18]. The risk community is a society that knows how to deal with uncertain situations according to its creative abilities. Community life amid the COVID-19 pandemic has made people consciously more creative in reducing the risks that occur due to SARS-CoV-2 infection. Creativity, referred to in the risk community, is the ability possessed by the community to independently mitigate and overcome the risks that occur [22].

Efforts to overcome uncertainty in modern society are dialectical or what Beck calls "modern reflexive" or "reflexive modernization," namely a process of changing individuals and institutions in responding to risky and uncertain conditions and how risks are prevented, minimized, or channeled. Beck also claims that this response manifests through reflection on uncertainty as an imagined risk that could have previously occurred. Communities that are victims of risk then reflect on the risk of modernization. Then they begin to observe and collect data about the risks and consequences. Risk is produced from sources of welfare in modern society from various life activities.

In the difficult times of the COVID-19 pandemic, the PT industry and its employees have tried to minimize the risks and uncertainties in business continuity. The new modern society has the possibility of facing several types of hazards. Therefore, their orientation is to seek safety in their activities. As in the case of the PT industry, work productivity can be sustained by implementing preventive measures and health protocols to protect workers from the risks of COVID-19 infection.

The PT industry has established an emergency response team and other preventive measures, by a specific risk assessment plan against the SARS-CoV-2 infection, requiring all employees to wear masks while working, facilitating facilities for washing hands with soap and hand sanitizer, imposing physical distancing rules and conducting outreach and education about the COVID-19 infection [23,24].

The action plan at PT is a form of reflexivity for protecting employees from infection. As a result, health protocols and preventive measures at the workplace were adequate to prevent the transmission of COVID-19 infection to employees and sufficient to maintain employees' work productivity [25-27].

Beck's theory of the "risk society" is based on technological developments that lead to man-made ecological disasters, such as the COVID-19 pandemic, which may be classified as an unwanted global threat because of its massive transmission. In this pandemic, Ulrich Beck's risk society approach can improve the current industrial society. There are two stages of "reflexive modernization," namely the "reflex" and the "reflexive" stages. The essence of the "reflex" stage is the beginning of something that we may consider "hazardous," created by modernization but not realized. At this point, the catastrophe of the industrialization process starts to occur. Next, the reflexive stage is defined as a change in the perspective of ordinary people towards a risky society, meaning that people begin to live side by side and with the courage to take risks. At this stage, as Beck said, the individual must ascertain the uncertainty caused by persistent insecurities [18,28].

In the case of COVID-19 faced by some business actors and industrial workers, the pandemic threatened both business and industrial workers. COVID-19 has had a detrimental impact on business actors and industrial workers. In this case, the COVID-19 pandemic has seriously threatened business continuity at PT [29]. Anxiety and fear of COVID-19 can threaten any company's business continuity, and PT workers experience fear and anxiety. However, the fear of losing jobs due to layoffs occurs in almost all the factories that have been so seriously affected. According to Beck's approach, fear is a reflex stage where individuals and organizations begin to accept risks, and the response is so spontaneous may not be based on scientific evidence [30-32].

After the first waves of the COVID-19 pandemic, employees need to continue working through health protocols. Again, this aligns with Beck's approach. Indeed, in the reflection stage, employees carry out their working duties by implementing health protocols to minimize the risk of infection [33].

The COVID-19 pandemic has changed the social order during the waves of COVID-19 infections. This paper has examined the "reflexivity" concept in preventing the risk of COVID-19 infection and maintaining work productivity through the "Risk Society and Reflexive Modernization" theory developed by Ulrich Beck. Our findings confirm two approaches in applying the reflexivity theory at the PT to prevent exposure to COVID-19 infection. These stages are the "reflex" and the "reflection" stages. At the reflex stage, PT's employees were passive towards the risks of getting infected by COVID-19 infection. However, when shifting to the "reflection" stage, employees in the PT industry started to work as before the pandemic by following preventive measures and health protocols. In conclusion, health and safety at work and productivity at the workplace were balanced.

Author Contributions: Conceptualization and writing— original draft preparation: FT, TU. Writing—review, and editing: TU. Supervision: AD. All authors have read and agreed to the published version of the manuscript.

Funding: None

Acknowledgments: None

Conflicts of Interest: None declared

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