

Compliance with The Implementation of Covid-19 Health Protocol Infection Prevention and Control (IPC) Training and Occupational Safety and Health (OSH) as Mediation on Occupational Risks of Health Workers at Tengku Rafi'an Hospital

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ARTICLE INFO

Date received : 20 February 2022

Revision date : 01 March 2022

Date received : 10 March 2022

Keywords:

Covid-19 health protocol; IPC;
health workers occupational risks;
OSH

ABSTRACT

There are still employees who do not understand Covid-19 prevention and control protocol in hospitals and are not disciplined in carrying out Covid-19 health protocol. IPC training implementation that has not been appropriately structured is considered the cause of some employees being exposed to Covid-19. This study aims to analyze the effect of compliance Covid-19 health protocol implementation and the implementation of Infection Prevention and Control training on the occupational risks of health workers and Occupational Health and Safety standards implementation as intervening variables in the Covid-19 pandemic era at Tengku Rafi'an Regional Public Hospital simultaneously and partially. This research method is causative descriptive research with a quantitative study approach. The sample of this study was 200 health workers who work in hospitals. The data analysis technique used is index analysis using the three-box method and Structural Equation Modeling (SEM) for path analysis. Conclusion of this study showed the implementation of the Covid-19 Health Protocol, IPC Training, and Occupational Safety and Health Standards implementation together significantly affected the Occupational Risks of Health Workers simultaneously and partially at Tengku Rafi'an Regional Public Hospital.

INTRODUCTION

China revealed a case of pneumonia where the exact cause of the issue was unknown on December 31, 2019. Then, on February 11, 2020, the World Health Organization (WHO) gave the name of this virus as Coronavirus Disease 2019 (COVID-19) (Burhan, 2020).

The COVID-19 pandemic has had a very significant impact on the existing health order in the world, including Indonesia. No one is unaffected by

this pandemic where almost all components feel the impact, including health workers feeling fatigued, fear, anxious, even being required to work under pressure. This change in workflow is due to the pandemic. Hospitals need psychological support and supplies amid a financial crisis, especially medical equipment, Personal Protective Equipment (PPE) (Chaudhari & Dhingra, 2020). Since, this has a negative impact, especially in the decision-making process (accuracy, vigilance, exchange of

How To Cite: Chairuddin, B., Wahidi, K. R., & Nugroho. N. (2022). Compliance with The Implementation of Covid-19 Health Protocol Infection Prevention and Control (IPC) Training and Occupational Safety and Health (OSH) as Mediation on Occupational Risks of Health Workers at Tengku Rafi'an Hospital. *Journal of Social Science*, 3(2). <https://doi.org/10.46799/jss.v3i2.305>

E-Issn: 2721-5202

Published By: Ridwan Institut

information), which can be dangerous for patient safety (Zipperer, 2020).

Globally, the number of confirmed cases is 186,318,584, and the number of deaths is 4,028,258. In Indonesia, the number of positive confirmed cases that the ministry of health has released is 2,527,203 people, of which 376,015 active cases (14.9%), 2,084,724 cases recovered (82.5%), and with a death toll of 66,464 people (2.6%) as of the 12th July 2021. This shows that Indonesia has a death rate from COVID-19 of 2.6%. The death rate or the so-called Case fatality rate (CFR) is percentage of deaths number calculated based on overall COVID-19 positive cases that have been reported (Ministry of Health of the Republic of Indonesia, 2021)

Until May 2021, 72 (17.14%) health workers from 420 health workers at Tengku Rafi'an Regional Public Hospital were exposed to Covid-19, as it is known that the World Health Organization (WHO) has set a limit on the percentage of the positivity rate of 5%. The positivity rate is comparing the (positive) cases that occur with the number of tests performed. Furthermore, during the pandemic, infection preventionists observed that uncertainty and inconsistent directions were important issues (Alsuhaibani et al., 2022).

From the available data, there are 306 health workers at Tengku Rafi'an Regional Public Hospital who have attended the IPC training or 76.25% who have not participated in the training, or approximately 114 health workers. During the COVID-19 pandemic, the IPC had only held training seven times, and it was not structured or well-scheduled. Thus, it will affect the risk of existing health workers. Meanwhile, the level of compliance Covid-19 Protocol implementation, based on a report from the IPC, 65% have implemented the Covid-19 Protocol compliance. In comparison, 20% still have health workers who still like to huddle both during work, and during breaks, 15% are still in-service uses PPE that does not appropriate, this is due to the non-optimal fulfillment of occupational health equipment and facilities, including the K3RS program.

Therefore, risk management is needed to minimize the occurrence of occupational risks for health workers at Tengku Rafi'an Regional Public Hospital. The research contribution is shown to develop the results of K3RS knowledge.

Research Model

The following is a description of the constellation to describe this current research:

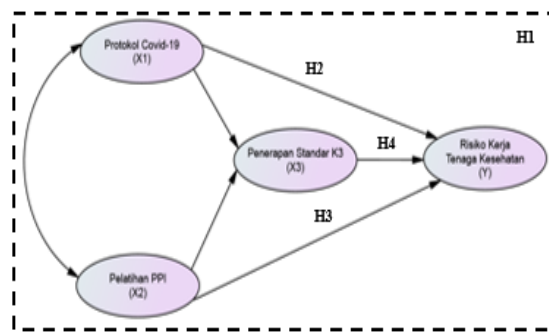


Figure 1. Research Constellation (WHO, 2020b, Minnesota Department of Health, 2014, Braeseke, 2011, World Health Organization and International Labour Organization, 2021)

Research Hypothesis Development

Based on the identification and formulation of the problem, the researcher developed four research hypotheses, as follows:

- H1: There is a positive influence between the implementation of the Covid-19 health protocol, IPC training implementation, and the application of occupational health and safety standards to the occupational risks of health workers simultaneously at Tengku Rafi'an Hospital, Siak Regency
- H2: There is a positive influence between the Covid-19 health protocol implementation on the work risk of health workers at Tengku Rafi'an Hospital, Siak Regency.
- H3: There is a positive influence between IPC training implementation on the work risk of health workers in the Covid-19 pandemic era at Tengku Rafi'an Hospital, Siak Regency.
- H4: There is a positive influence between the application of occupational health and safety standards on the occupational risk of health workers at Tengku Rafi'an Hospital, Siak Regency.

On the other hand, indirect relationships are the result of the effects of exogenous variables on endogenous variables mediated by intervening variables. Adding direct and indirect relationships (Ghozali, 2016).

The data analysis in this research uses a Structural Equation Modeling (SEM) path analysis model with the help of the AMOS program. Judging from the research constellation, obtained 2 (two) linear substructures.

The first substructure analysis is analyzing the implementation of the Covid-19 health protocol (PC) the implementation of infection prevention and control (IPC) as an exogenous variable to the

application of occupational health and safety (OHS) standards, both simultaneously and partially.

The second substructure analysis is analyzing the implementation of the Covid-19 Health Protocol (PC), the implementation of the IPC, the application of Occupational Health and Safety (OHS) standards as an exogenous variable to the Occupational Risk of Health Workers (RK) partially or simultaneously.

Sobel test was conducted to determine whether the variable of the application of Occupational Safety and Health Standards had an effect as a mediation (intervening) or not. It is said to be an intervening variable if the variable influences the relationship between the independent variable and the dependent variable (Ghozali, 2016).

METHOD

The research method in this study is observational research, using a quantitative and descriptive causative study design. The population and sample are hospital health workers in the Covid-19 pandemic era as many as 200 respondents. In this study, the questionnaire became a technique in data collection. The research questionnaire collects primary data obtained from selected respondents, becoming the research sample. The preparation of the questionnaire is done by submitting a closing statement and several answer choices using a Likert scale which aims to measure how strongly the level of agreeing or disagreeing with a statement is (McDaniel & Gates, 2013).

Path analysis is used in data analysis techniques, which use multiple and bivariate regression analysis in its development. This analysis aims to test the regression equation in which several exogenous and endogenous variables are involved simultaneously, and it is possible to test the intervening variables. In addition, this analysis can measure the relationship directly or indirectly between variables in the research model. The beta coefficient can be seen to determine the direct relationship between exogenous variables and endogenous variables.

Test Instrument Data

Pearson Product Moment Correlation is used to test the validity, and the results are valid if the value of $r_{count} > r_{table}$. Data from 30 respondents was taken for validity testing. The test results show that all variables $r_{count} \geq r_{table}$

(two-sided test with sig. 0.05), it can be concluded that all instruments or statement items are declared valid to the total score if the correlation is significant. Questionnaire items that are not valid are not included in further analysis.

The Cronbach Alpha (α) test was used to test the reliability with a value of $(\alpha) > 0.6$, the results showed that all of the variables in this study were reliable. All variables tested for reliability were found to meet the requirements.

RESULTS AND DISCUSSION

Deskriptive Analysis Results

The research was conducted by distributing 200 copies of the questionnaire that make the data obtained were 200 respondents. From the distribution of research instruments that are distributed, it produces several characteristics of data samples based on occupations and work locations as presented in the following:

Table 1
Respondents Demographic Characteristics Respondents (n=200)

No	Occupation	Frequency	Percentage
1	Doctor	37	18,5%
	Nurse	112	56,0%
	Midwives	43	21,5%
	Laboratory Officer	3	1,5%
	Radiology Officer	5	2,5%
Age			
2	20-30 Years Old	53	26,5%
	31-40 Years Old	69	34,5%
	> 40 Years Old	78	39,0%
Work Locations			
3	Emergency Room (ER)	23	11,5%
	Outpatient	35	17,5%
	Non-Covid Hospitalization and Non-Covid ICU	109	54,5%
	Covid-19 Hospitalization and Covid-19 ICU	25	12,5%
	Laboratory	3	1,5%
	Radiology	5	2,5%
Length of Work			
4	0-5 Years	50	25,0%
	6-10 Years	68	34,0%
	>10 Years	82	41,0%

Processed Primary Data, 2021

From the study results in table 1, the research subjects used were based on the occupation, which showed the highest was dominated by nurses, include 112 (56.0%) while the lowest was laboratory workers, include 3 (1.5%). Then the highest age range was 78 (39.0%) and the age range between 20-30 years was 53 (26.5%) the lowest.

The data obtained at the work location, include Non-Covid Inpatient and Non-Covid ICU as much as

109 (58.9%) is the highest in this study and the work location in the Laboratory section is 1 (0.5%) the lowest.

The data obtained also shows that work experience >10 years dominates the subjects in this study, include 82 (41.0%) and subjects who have low work experience are subjects who have a score range of 0-5 years of 50 (25.0%).

The goodness of fit test

After testing the influence between exogenous and endogenous variables to produce a good model, the next step is to analyze the suitability of the data thoroughly. This test determines whether the obtained model is a fit model or not if the test results in an invalid modification or specification of the model is needed.

Table 2
Results of Goodness of Fit

No	Goodness of Fit	Cut off value	Results	Model evaluation
1.	Probabilitas Chi Square	≥ 0,05	0,186	Good Fit
2.	CMIN/DF	≤ 2,00	1.74	Good Fit
3.	GFI	≥ 0,90	0.99	Good Fit
4.	AGFI	≥ 0,90	0.95	Good Fit
5.	CFI	≥ 0,90	0.99	Good Fit
6.	TLI	≥ 0,90	0.95	Good Fit
7.	NFI	≥ 0,90	0.98	Good Fit
8.	IFI	≥ 0,90	0.99	Good Fit
9.	RMSEA	≤ 0,08	0.06	Good Fit

Processed primary data, 2021

According to (Ghozali, 2016) overall Goodness of fit can be assessed based on at least five criteria.

Based on the table above, in this study, it can be seen there are at least 5 GOF indicators that show a good fit, thus it can be concluded that the overall model is fit and appropriate. In other words, these three variables make up the Covid-19 Protocol (PC) variable, IPC Training (IPC), Implementation of OHS standards as intervening (OHS) and the work risk of health workers (RK).

Path Analysis Results

This analysis aims to analyze the implementation of the Covid-19 health protocol (PC), the implementation of infection prevention and control (IPC), the application of occupational health and safety standards (OHS) as an intervening variable for the occupational risk of health workers (RK) partially or simultaneously. Following are the results of calculations using SEM AMOS V.23, visualized in the following path diagram:

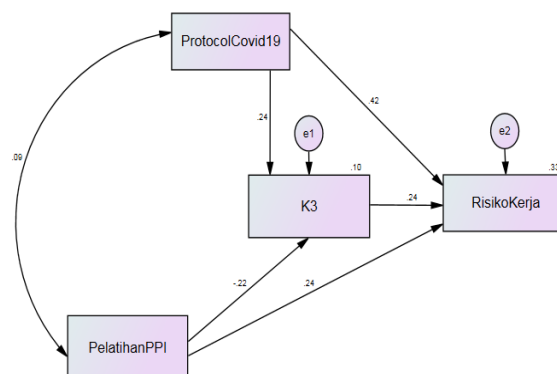


Figure 1. Path Diagram Calculation Results

Correlation Analysis

The correlation between the Implementation of the Covid-19 Health Protocol (PC) and the Implementation of Infection Prevention and Control (IPC) can be seen in the following table and figure:

Table 3
Covid-19 Health (PC) and Implementation of Infection Prevention and Control (IPC)

Correlation Between Variables	Estimate	P-Value
Covid19 Protocol <--> IPC training	0.454	0.000

Processed primary data, 2021

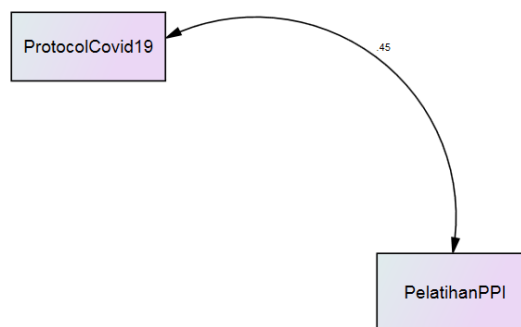


Figure 3. Calculation Results of Correlation Diagram

Based on these results, the correlation between the Implementation of the Covid-19 Health Protocol (PC) and the Implementation of Infection Prevention and Control (IPC) is 0.454 (p = 0.000 0.050), thus it can be concluded that the correlation is quite strong.

Path Analysis of the Implementation of the Covid-19 Health Protocol (PC), Implementation of Infection Prevention and Control (IPC) as an exogenous variable to the Implementation of Occupational Health and Safety (OHS) Standards

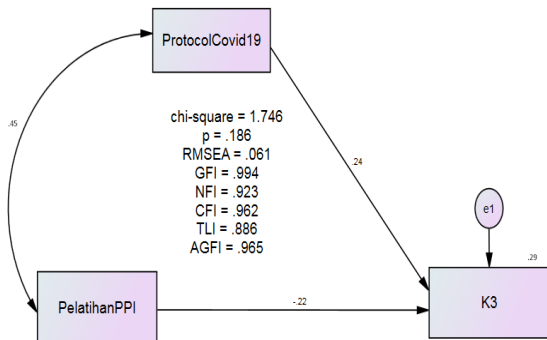


Figure 4. Substructure Diagram 1

Table 4
Implementation of the Covid-19 Health Protocol (PC), Implementation of Infection Prevention and Control (IPC) on the Implementation of Occupational Health and Safety (OHS) Standards

Variables Effect	Estimate	P-Value	R Square
OHS <-- IPC Training	-0.315	0.000	0.290
OHS <-- Covid 19 Protocol	0.389	0.000	

Processed primary data, 2021

The result of the Coefficient of Determination obtained is 0.290 or 29.0%, which means the effect of the Covid-19 Health Protocol (PC), the Implementation of Infection Prevention and Control (IPC) on the Implementation of Occupational Health and Safety (OHS) Standards simultaneously is 29.0%, as for the rest is influenced by other factors that are equal to 71.0% (100%-29.0%).

Path Analysis for Implementation of Covid-19 Health Protocol (PC), Implementation of Infection Prevention and Control (IPC), Implementation of Occupational Health and Safety Standards (OHS) on Health Workers Risk (RK)

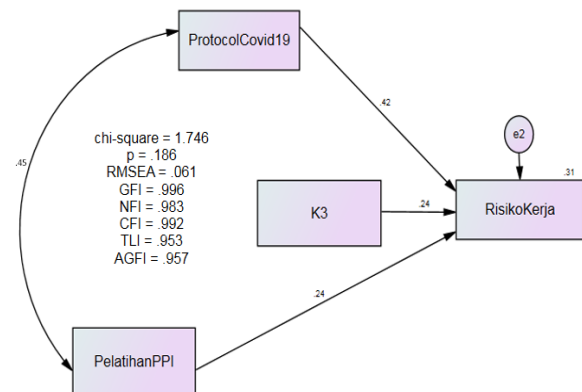


Figure 5. Substructure Diagram 2

Table 5
Implementation of Covid-19 Health Protocol (PC), Implementation of Infection Prevention and Control (IPC), Implementation of Occupational Health and Safety Standards (OHS) on Occupational Risks of Health Workers (RK)

Variables Effect	Estimate	P-Value	R Square
Work Risk <-- IPC Training	0.256	0.000	0.315
Work Risk <-- Covid 19 Protocol	0.507	0.000	
Work Risk <-- OHS	0.179	0.000	

Processed primary data, 2021

From table 5, the R-square (r²) number is 0.315, the magnitude of this number is the magnitude of the influence of the Covid-19 Health Protocol (PC), Implementation of Infection Prevention and Control (IPC), Implementation of Occupational Health and Safety (OHS) Standards on Workforce Risk Health (RK) simultaneously is 31.5% (0.315 x 100%). In contrast, other factors influence the rest, include 68.5% (100%-31.5%).

Table 6 summarizes the tests carried out between exogenous and endogenous variables

Table 6
The effect of exogenous variables with endogenous variables test

Variables Effect	Estimate	P-Value	Conclusion
OHS <-- IPC Training	-0.315	0.000	Significant
OHS <-- Covid19 Protocol	0.389	0.000	Significant
Work Risk <-- IPC Training	0.256	0.000	Significant
Work Risk <-- Covid 19 Protocol	0.507	0.000	Significant
Work Risk <-- OHS	0.179	0.000	Significant

Processed primary data, 2021

Direct and Indirect Effect
Table 7
Direct and Indirect Effects

Standardized Total Effects				
	IPC Training	Covid19 Protocol	OHS	Work Risk
OHS	-.223	.244	.000	.000
Work Risk	.186	.478	.236	.000
Standardized Direct Effects				
	IPC Training	Covid19 Protocol	OHS	Work Risk
OHS	-.223	.244	.000	.000
Work Risk	.239	.420	.236	.000
Standardized Indirect Effects				
	IPC Training	Covid19 Protocol	OHS	Work Risk
OHS	.000	.000	.000	.000
Work Risk	-.053	.058	.000	.000

Processed primary data, 2021

Based on table 7, the data obtained is used to determine the relationship between the effect of the IPC Training and the Covid Protocol mediated by OHS on Occupational Risk. It can be said that the indirect relationship between the IPC variable and the Covid-19 Protocol on Occupational Risk is significant. Therefore OHS can mediate the influence of the relationship.

Sobel Test

The Effect of Covid-19 Health Protocol Implementation on the Risk of Health Workers through the Implementation of Occupational Safety and Health Standards

$$\begin{aligned}
 Sab &= \sqrt{b^2 Sa^2 + \alpha^2 Sb^2 + Sa^2 Sb^2} \\
 &= \sqrt{(0.1790)^2 (0.1070)^2 + (0.3890)^2 (0.0460)^2 + (0.1070)^2 (0.0460)^2} \\
 &= \sqrt{0.0007112587} \\
 &= 0.0266694344
 \end{aligned}$$

Thus, the value of t, obtained from the tests carried out as follows:

$$t = \frac{ab}{sab} = \frac{0.069631}{0.0266694344} = 2.610891520$$

Based on the calculation of the t-test above, the t count = 2.610891520 is greater than the t table with a significance level of 0.05, which is 1.97. it is concluded that the value of 2.610891520 can mediate, or the coefficient is significant.

The Influence of the Infection Prevention and Control (IPC) Implementation on the Risks of Health Workers through the Implementation of Occupational Safety and Health Standards

$$\begin{aligned}
 Sab &= \sqrt{b^2 Sa^2 + \alpha^2 Sb^2 + Sa^2 Sb^2} \\
 &= \sqrt{(0.1790)^2 (0.0950)^2 + (-0.3150)^2 (0.0460)^2 + (0.0950)^2 (0.0460)^2} \\
 &= \sqrt{0.0005182270} \\
 &= 0.0227646003
 \end{aligned}$$

Thus, the value of t, obtained from the tests carried out as follows:

$$t = \frac{ab}{sab} = \frac{-0.056385}{0.0227646003} = -2.476871957$$

Based on the t-test calculation above, the t-count = -2.476871957 is greater than the t-table with a significance level of 0.05, -1.97. it is concluded that the value of -2.476871957 can mediate or the coefficient is significant

DISCUSSION

The effect of the Covid-19 health protocol implementation, IPC training implementation, and the application of occupational safety and health standards on the work risk of health workers in the Covid-19 pandemic era simultaneously

To minimize the risk of health workers to COVID-19, the risk management process must be an integral part of the management of Tengku Rafi'an Regional Public Hospital in decision making and integrated into the structure. The OHS policy must be established starting from the director level to below the ranks or all health workers, which includes prevention of occupational risks (Risk Identification, Risk Assessment), providing information and training, as well as providing the necessary organization and facilities. It aims both to carry out prevention and protection, especially primary prevention, and assist in the decision-making process based on risk analysis at Tengku Rafi'an Regional Public Hospital.

This is in line with the average index results obtained where the Covid-19 Health Protocol implementation, IPC Training implementation, and Implementation of Occupational Safety and Health Standards are at high intensity, and the work risk of health workers is at low power, which means that the three exogenous variables have a significant effect. To reduce the risk of health workers work.

The results of this study confirm the research conducted (Hertzberg, Wang, Elon, &

[Lowery-North, 2018](#)) with the results that the risk of cross-infection between health workers is greater than between patients or between patients and health workers. Service providers had the least risk, followed by nurses, and non-patient care staff had the greater risk. Moreover ([Pedrosa et al., 2020](#)) with the results of a risk assessment of members in the radiology department using the CDC risk factors for Covid-19 infection.

The effect of implementing Covid-19 health protocol on the work risk of health workers

Applying aspects of administrative control, Environmental Control and Compliance Engineering, Behavior, binding regulations in implementing the covid-19 health protocol will minimize the risk of health workers working at Tengku Rafi'an Regional Public Hospital against Covid-19, this is in line with the average results the index of the application of the covid-19 protocol which shows high intensity. In contrast, the average risk index of health workers shows low intensity. This means that the higher the implementation of the Covid-19 protocol, the lower the risk level of health workers against Covid-19.

The results of this study confirm the research conducted ([Tarfaoui, Nachtane, & Goda, 2020](#)), namely the use of additive manufacturing (face masks and ventilator ambu bags), known as 3D printing, can be used to overcome the limitations of PPE for health workers and has an essential function to support conventional production supply. Then, ([Calderwood et al., 2020](#)) with the results that the use of PPE (N95 respirators, powered air-purifying respirators (PAPRs), or half-mask respirators, face shields) is recommended for health workers who take nasopharyngeal swab specimens, perform intubation, extubate, or bronchoscopy, ENT procedures, surgery, and chest tube placement in patients with suspected or confirmed Covid-19.

The effect of implementing IPC training on the work risk of health workers

This IPC training is important to be carried out comprehensively and intensively since IPC practitioners helped with emergency preparedness and response (e.g., fever-triage tactics, screening procedures, and quarantine practices for sick or suspected patients) to stop the virus from spreading, particularly from patients to health workers ([Wang, Liu, Zhou, & Lee, 2020](#)). Especially at Tengku Rafi'an Regional Public Hospital to minimize the risk of health workers during the COVID-19 pandemic, such as implementing 5 Moments of Hand Hygiene, Cough Ethics, procedures for using PPE correctly and others, as

well as implementing standard precautions. As part of the infection prevention and control process that must continue to be carried out by both patients and related staff throughout the Tengku Rafi'an Hospital area. The infection prevention and control program at Tengku Rafi'an Hospital and building a monitoring and evaluation system in its implementation need to be supported in its implementation both by health workers in providing services, even individuals (including patients and visitors). In line with the average index according to the three-box method of implementing the PPI training, it is at a high score level, which means the influence of this PPI training reduces the risk of health workers during the COVID-19 pandemic.

The results of this study confirm the research conducted ([Piche-Renaud et al., 2020](#)) that is, only 86 respondents (50%) know the steps for using PPE correctly; 60 (35%) respondents know the correct steps for removing PPE; and most (n = 113, 70%) understood the need to wash hands immediately before removing masks and eye protection.

The effect of implementing occupational safety and health standards on labor risk

As recommended, implementing occupational safety and health standards will create a healthy work environment without endangering health workers and patients, and the surrounding community. This is also in line with the average results of the index. The effect of applying occupational health and safety (OHS) standards is at a high intensity and affects the risk of health workers at a low intensity.

The OHS policy must be established starting from the director's level to below its ranks or all health workers, including prevention of occupational risks, provision of information and training, and provision of the necessary organization and facilities. This has a good aim to be able to carry out prevention and protection, especially primary prevention at Tengku Rafi'an Regional Public Hospital.

The results of this study confirm the research conducted ([Kim et al., 2021](#)), namely, to prevent nosocomial transmission, all patients with suspected symptoms, relevant radiological features, or leading epidemiology are isolated. Then, ([Pedrosa et al., 2020](#)) with the results of a risk assessment of members in the radiology department using the CDC risk factors for COVID-19 infection.

CONCLUSION

The implementation of the Covid-19 Health Protocol, IPC Training, and the Implementation of Occupational Safety and Health Standards together have a significant effect on the Occupational Risks of Health Workers simultaneously and partially at Tengku Rafi'an Regional Public Hospital Siak Regency.

Implication

Theoretical Implications

Occupational risks of health workers are occupational hazards that place them at risk of illness, injury, and even death in the context of the COVID-19 response. These occupational risks include occupational infection with COVID-19, skin disorders and heat stress due to prolonged use of PPE, exposure to toxins due to increased disinfectants, psychological stress, chronic fatigue, stigma, discrimination, physical and mental violence, and abuse. Then, the risk assessment should lead to preventive and mitigating actions to avoid exposure based on the level of risk, considering the local epidemiological situation, the specifics of work arrangements and assignments, control hierarchy, and compliance with IPC measures. The workplace risk levels mentioned above can also help identify priority groups when the deployment of a COVID-19 vaccine is planned (WHO, 2021).

Implementing the COVID-19 health protocol is an essential part of the strategy to prevent the risk of health workers being exposed to the Covid-19 virus. Changes in behavior in IMR in the hospital environment can be implemented with several guidelines such as maintaining distance, using masks, maintaining hand hygiene, using PPE at work, and others (WHO, 2020).

Infection Prevention and Control (IPC) is a series of ways to prevent disease transmission in all areas in the health facilities (Minnesota, 2014).

Health protection in the workplace aims to promote and maintain the highest physical, mental, and social safety for the entire profession. Avoid workers' health problems as a result of the work situation. Protect workers in the workplace from the harm posed by factors harmful to their health. The placement and training of workers in the work area need to be adjusted to their physiological and psychological abilities. In short, "Adaptation of work to people, and adaptation of everyone to their work" (Braeseke, 2011).

Managerial Implications

To minimize the risk of health workers to covid-19 The risk management process must be an integral part of the management of Tengku Rafi'an Hospital in decision making and integrated into the structure. The OHS policy must be established starting from the director level to below the ranks or all health workers, including prevention of occupational risks (Risk Identification, Risk Assessment), providing information and training, and providing the necessary organization and facilities. In addition, planning and budgets need to be prepared by both hospital management and the government to implement the risk management system built by the hospital properly.

The management of Tengku Rafi'an Regional Public Hospital applies aspects of administrative control, Environmental Control, and Compliance Techniques, Behavior, Binding regulations in implementing the Covid-19 health protocol so that it will minimize the work risk of health workers at Tengku Rafi'an Hospital against Covid-19

Create a program/strategy for infection prevention and control and build a Monev (Monitoring and Evaluation) system in its implementation

OHS policy must be established starting from the director level to below the ranks or all health workers, which includes prevention of occupational risks (Risk Identification, Risk Assessment), providing information and training, and providing the necessary organization and facilities. It aims both to carry out prevention and protection, especially primary prevention, and assist in the decision-making process based on risk analysis at Tengku Rafi'an Regional Public Hospital.

Research Limitations

There are several limitations of the research conducted, namely that the research respondents consisted of various health professional professions, with varying shift hours, making it somewhat difficult for researchers to meet to clarify the contents of the questionnaire. The results obtained only apply to the population of health workers, do not generalize like other hospital employees

Suggestion

Based on the results and discussion of hypothesis testing and research findings, suggestions for recommendations:

The risk management process must be an integral part of the Tengku Rafi'an Regional Public Hospital management in decision making and

integrated into the structure. The OHS policy must be established starting from the director level to below the ranks or all health workers, including prevention of occupational risks (Risk Identification, Risk Assessment), providing information and training, and providing the necessary organization and facilities. It aims both to carry out prevention and protection, especially primary prevention, and assist in the decision-making process based on risk analysis at Tengku Rafi'an Regional Public Hospital.

Implementing aspects of administrative control, Environmental Control and Compliance Engineering, Behavior, binding regulations in implementing the COVID-19 health protocol will minimize the work risk of health workers at Tengku Rafi'an Regional Public Hospital against Covid-19.

The management of Tengku Rafi'an Regional Public Hospital through the IPC Committee needs to provide comprehensive and intensive training for all health workers such as applying 5 Moments of Hand Hygiene, Cough Ethics, procedures for using PPE correctly and others, as well as applying standard precautions as part of the prevention and treatment process. Infection control must continue to be carried out by both patients and related officers in all areas of Tengku Rafi'an Regional Public Hospital.

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Journal of Social Science

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