



Correlation Between Health Protocol with Covid-19 Cases in Workers in dr. Zainal Umar Sidiki Hospital

Rosmin Ilham

Lecturer at Department of Nursing Stikes Tanawali Takalar

ARTICLE INFO

Article history:

Received 13 February 2021
Accepted 4 August 2021
Published 5 September 2021

Keyword:

Health Protocols
COVID-19
Health Workers

ABSTRACT

The whole world is under the pressure of the COVID-19 outbreak, where the death toll rises, including the health workers. Action to prevent the increase in the outbreak can be applied by the health protocols. The study aims to analyze the correlation between the health protocols and COVID-19 incident on workers at RSUD dr. Zainal Umar Sadiki. The study uses a cross-sectional study design. The populations are all medical workers during COVID-19 while the application of total sampling as the sampling obtains 40 respondents. The result shows that 90% are good, and 87,5% of health workers are not confirmed with COVID-19, and 12,5% are confirmed with COVID-19. Based on the result of the test analysis using Fisher's exact test with p -value: 0,004. The conclusion is that there is a correlation between health protocols with COVID-19 incidents on workers at dr. Zainal Umar Sadiki regional hospital. It is suggested to health workers to always comply with the health protocols in providing services to patients with COVID-19 suspected or to those who have been confirmed with COVID-19.

This open access article is under the CC-BY-SA license.



ABSTRAK

Kata kunci:

Protocol Kesehatan
COVID-19
Petugas Kesehatan

**) corresponding author*

Lecturer at Department of Nursing Stikes
Tanawali Takalar

DOI: 10.30604/jika.v6iS1.767

Seluruh dunia berada dalam tekanan wabah COVID-19 dan banyak kasus kematian tidak terkecuali petugas kesehatan, tindakan untuk mencegah peningkatan kasus tersebut dengan melakukan protokol kesehatan. Tujuan penelitian ini untuk menganalisis protokol kesehatan dengan kejadian COVID-19 pada petugas yang bekerja di RSUD dr. Zainal Umar Sidiki. Penelitian menggunakan desain cross-sectional study. Populasi adalah seluruh petugas COVID-19 dengan teknik pengambilan sampel yaitu total sampling sejumlah 40 responden. Hasil penelitian menunjukkan bahwa 90% sudah baik dan 87,500 tenaga kesehatan tidak terkonfirmasi COVID-19 dan 12,500 terkonfirmasi COVID-19. Berdasarkan hasil uji analisis menggunakan uji Fisher's exact dengan hasil p value: 0,004. Kesimpulan dari hasil penelitian terdapat hubungan protokol kesehatan dengan kejadian COVID-19 pada petugas yang bekerja di RSUD dr. Zainal Umar Sidiki. Disarankan agar tenaga kesehatan agar selalu mematuhi protokol kesehatan dalam memberikan pelayanan pada pasien yang diduga COVID-19 atau yang telah terkonfirmasi COVID-19.

This open access article is under the CC-BY-SA license.



INTRODUCTION

Today's era has seen the whole world to be impacted by COVID-19 pandemic. Frontline health workers in most health facilities are no exception; the numbers of COVID-19 infection cases in health workers, particularly doctors and nurses, are increasing on a daily basis. The virus infection has caused casualties of such health workers. The Center for Disease Control and Prevention in the US, during the weekly report in April, informed that from the span of February 12 to April 9, 9,282 out of 49,370 health workers (19%) had been infected by COVID-19 virus. Meanwhile, in Indonesia, the data of COVID-19 Response Task Force reported at least 55 casualties of health workers due to COVID-19 infection (Theconversation.com, June 28, 2020).

The increasing trend of COVID-19 infected health workers actually indicates that the occupation is among the most susceptible to the virus (Liu et al., 2020). Efforts have been made by the government in preventing the widespread of the virus in the community as well as in healthcare facilities. The government, through the Ministry of Health, has conducted preventive measures to control the disease spread by implementing health protocols in all healthcare facilities, including hospitals, community health services, or health clinics. According to the Indonesian Dictionary, 'protocol' refers to the procedures that apply on a global scale.

Regarding this, the health protocol is implemented in the form of conducts of infection prevention and control. The conducts refer to the prevention guidelines of COVID-19 spread released by the Ministry of Health of the Republic of Indonesia (Ministry of Health, 2020) in the Strategies of Prevention and Control of Infection in Healthcare Facilities. The document encompasses the administration standard and control caution, as well as education and training.

The implementation of isolation caution involves standard caution and transmission caution. Standard caution comprises hand hygiene, use of personal protective equipment, respiratory hygiene, environmental hygiene, linen handling, waste management, and disinfection of patient care equipment. In the meantime, transmission caution involves the implementation of triage by filtering at the new patient entry post, isolation of patients with the systemic disorder, applying safe social distance sign with a minimum distance of 1 meter in the patient queue locations, adjusting the placement of consultation desk, check-up bed, and patients' and health workers' chair, as well as isolating suspect cases and/or confirmed virus-positive patients in an Isolation Room (Ministry of Health, 2020).

Dr. Zainal Umar Sidiki hospital is the regional government hospital of North Gorontalo regency. During the pandemic, the hospital has provided service to the general patients as well as COVID-19 suspect and confirmed-positive patients

Based on the medical record data, the hospital has received 45 COVID-19 suspect patients and 40 confirmed-positive patients. From the total COVID-19 positive patients, 24 patients were the health workers that work in the hospital. They consisted of 14 doctors, seven nurses, and three midwives.

As the initial observation suggests, some of the health workers did not implement the health standard protocol, particularly regarding the standard caution and transmission caution; several procedures such as washing hands properly and proper use of personal protective equipment were not implemented optimally. The purpose of this research is to investigate the correlation between the implementation of

health protocol and COVID-19 cases in health workers in Zainal Umar Sidiki regional public hospital.

METHOD

Research participants

The participants of the study were 40 health workers in dr. Zainal Umar Sidiki hospital.

Research procedure

The study employed a cross-sectional design.

Data analysis

The data were collected by questionnaire and analyzed by Fisher exact test.

RESULTS AND DISCUSSION

Provided below are the analysis results regarding the implementation of health protocols and prevalence of Covid-19 by health workers at dr. Zainal Umar Sidiki Regional Public Hospital, North Gorontalo Regency (table 1):

Table 1
Distribution of the frequency of respondent (N=40).

Characteristics respondent	N	Percentage (%)
Implementation of the Health Protocol		
Poor	4	10
Good	36	90
Covid-19 Status		
Negative	35	87.5
Positive	5	12.5

Source: Primary data, 2020

The results show that the health protocol in Dr. Zainal Umar Sidiki regional public hospital is implemented well by the health workers. As many as 36 respondents (90%) implement the health protocol properly, while four respondents (10%) did not implement a proper health protocol.

The study argues that the good practices of health protocol implementation in the hospital are mainly influenced by the availability of personal protective equipment.

Echoing this, the Regulation of Ministry of Health (Ministry of Health, 2020) in general regulates the protection of the health of an individual as the principles of COVID-19 spread prevention. Such measures involve: 1) wearing personal protective equipment in the form of a mask that covers the nose up to the chin, 2) washing hands with soap and running water properly, and 3) using hand sanitizer or alcohol-based antiseptic liquid.

Further, Pagliano&Kafil (2020) explain that the practice of washing hands or using alcohol-based antiseptic are simple yet effective to prevent the spread of pathogen and infections in healthcare facilities. This is in accordance with Ministry of Health (2020) that the prevention and control of the risks of disease spread, as based on the WHO recommendation, require to use of personal protective equipment such as mask, surgical gown, gloves, and eye protection tools (glasses or face protector) (Herron et al., 2020).

The historical record of COVID-19 check-up towards health workers in dr. Zainal Umar Sidiki hospital indicates that most cases are confirmed COVID-19 negative. A total of 35 respondents (87.5%) showed negative results, while the

rest five respondents (12.5%) showed confirmed COVID-19 positive.

Such results are presumably due to the health workers' conformity towards the standard service procedure during the COVID-19 pandemic. The virus spreads through air droplets and remains on an object for several hours; therefore, extra caution from health workers is necessary to prevent the spread of COVID-19 virus. In this regard, the health workers are obliged to comply with the health protocols and apply hygiene measures in treating the patients.

The profession of health workers is highly susceptible to infection, particularly before the dynamics of COVID-19 spread are fully marked. The reported cases were the spread of SARS-CoV-2 in workplace. The facilities in healthcare

service units must also comply with the standard health protocol as regulated to protect the health workers who treat the suspect or confirmed-positive COVID-19 patients. In addition to that, early recognition and isolation, including resource control for patients who might be infected, are essential to minimize the exposure of health workers towards unprotected and high-risk conditions. Such measures are of significance to protect the health workers from the infection of COVID-19 virus (Heinzerling et al., 2020).

The following table 2 displays the analysis results regarding the relationship between Health protocols and the cases of Covid-19 among the employees at dr. Zainal Umar Sidiki Regional Public Hospital, North Gorontalo Regency.

Table 2
Analysis of the Relationship of Health Protocols with the Prevalence of Covid-19 among the employees

Health Protocol	The cases of Covid-19				Total		p-Value
	Negative		Positive		Total	%	
	Total	%	Total	%			
Poor	1	2.5	3	7.5	4	10	0.004
Good	34	85	2	5	36	90	
Sum-total	35	87.5	5	12.5	40	100	

Primary data, 2020

As based on the results from 4 respondents that implemented poor health protocol, one respondent was confirmed COVID-19 negative, while three respondents were confirmed positive of the virus infection. Further, 34 of 36 respondents that applied proper health protocol were tested negative for the virus, while two respondents were confirmed positive.

The analysis results indicate a trend that proper implementation of health protocol is more likely to result in lower probability of COVID-19 infection. The Fisher exact test generates a p-Value of 0.004, or < 0.05. The numbers signify that there is a correlation between health protocol and COVID-19 cases in health workers in dr. Zainal Umar Sidiki regional public hospital.

The correlation is assumed to take place due to the proper implementation of health protocol by the health workers in the hospital. Regarding this, the implementation of health protocol in accordance with the standard procedures will lower the risk of exposure and infection of COVID-19. Such conducts comprise the use of personal protective equipment and hand hygiene protocol, as well as the placement of confirmed-positive patients in the isolation room. Personal protective equipment is among the most effective means to prevent the spread of COVID-19 pandemic, particularly in avoiding the exposure from the airborne virus droplets or from the droplets of the patients' body fluids. The same also applies to regular hand washing protocol. Virus can remain alive on the objects nearby the patients or object that have direct contact with the patients. The use of hand sanitation protocol using running water or an antiseptic hand rub is expected to kill the virus nearby the patient's area or that is carried by the health workers' hands.

This is in line with Chersich et al., (2020), that the risk of SARS-CoV-2 infection might be higher in the professionals working nearby the patients, such as doctors or nurses. In addition, other procedures such as non-invasive ventilation, High Flow Nasal Cannula, and mechanic ventilation can generate higher volume of aerosol; despite that, the procedures are still the main conducts. The risk of infection

in health workers can be lowered by applying the proper preventive conducts in healthcare facilities, including the use of surgical gowns, gloves, masks, and glasses/face shields.

The donning and doffing of such protective equipment require extra care; in doing such procedures, adequate training and monitoring are essential. The risk of infection might be at the highest point during the early phase of the COVID-19 outbreak since most of the health workers are not used to the use of personal protective equipment.

The findings of the study are in line with Sharma, et al (2020) that discover that the standard caution must be implemented with the full acknowledgment that all individuals are susceptible to the infection of COVID-19 that might occur in healthcare facilities. In this regard, it is essential to implement the monitoring of all health workers to ensure that they practice the standard cautions such as hand sanitation, safe coughing ethics, and use of personal protective equipment

CONCLUSIONS AND RECOMMENDATION

The study concludes that: 1) the health protocol was implemented well (90%) by the health workers in dr. Zainal Umar Sidiki regional hospital in North Gorontalo regency; 2) The historical record of COVID-19 check-in dr. Zainal Umar Sidiki hospital indicates that 87.5% of the health workers were tested COVID-19 negative; 3) There is a correlation between the implementation of health protocol and COVID-19 cases in health workers in dr. Zainal Umar Sidiki hospital, in which the Fisher exact test generates p-Value of 0.004, or <0.05.

The study recommends that hospitals and other healthcare facilities apply maximum monitoring of health protocol in health workers that provide treatment to the COVID-19 suspect patients or tested-positive patients.

REFERENCES

- Adhikari, S. P., Meng, S., Wu, Y., Mao, Y., Ye, R., Wang, Q., Sun, C., Sylvia, S., Rozelle, S., Raat, H., & Zhou, H. (2020). A scoping review of 2019 Novel Coronavirus during the early outbreak period: Epidemiology, causes, clinical manifestation and diagnosis, prevention and control. 1–12. <https://doi.org/10.21203/rs.2.24474/v1>
- Amawi, H., Abu Deiab, G. I., Aljabali, A. A., Dua, K., & Tambuwala, M. M. (2020). COVID-19 pandemic: An overview of epidemiology, pathogenesis, diagnostics and potential vaccines and therapeutics. *Therapeutic Delivery*, 11(4), 245–268. <https://doi.org/10.4155/tde-2020-0035>
- Awadasseid, A., Wu, Y., Tanaka, Y., & Zhang, W. (2020). Initial success in the identification and management of the coronavirus disease 2019 (COVID-19) indicates human-to-human transmission in wuhan, china. *International Journal of Biological Sciences*, 16(11), 1846–1860. <https://doi.org/10.7150/ijbs.45018>
- Chersich, M. F., Gray, G., Fairlie, L., Eichbaum, Q., Mayhew, S., Allwood, B., English, R., Scorgie, F., Luchters, S., Simpson, G., Haghghi, M. M., Pham, M. D., & Rees, H. (2020). COVID-19 in Africa: Care and protection for frontline healthcare workers. *Globalization and Health*, 16(1), 1–6. <https://doi.org/10.1186/s12992-020-00574-3>
- Florindo, H. F., Kleiner, R., Vaskovich- Koubi, D., Acúrcio, R. C., Carreira, B., Yeini, E., Tiram, G., Liubomirski, Y., & Satchi-Fainaro, R. (2020). Immune-mediated approaches against COVID-19. *Nature Nanotechnology*, 15(8), 630–645. <https://doi.org/10.1038/s41565-020-0732-3>
- Heinzerling, A., Stuckey, M. J., Scheuer, T., Xu, K., Perkins, K. M., Resseger, H., Magill, S., Verani, J. R., Jain, S., Acosta, M., & Epton, E. (2020). Transmission of COVID-19 to Health Care Personnel During Exposures to a Hospitalized Patient – Solano County, California, February 2020. *MMWR. Morbidity and Mortality Weekly Report*, 69(15), 472–476. <https://doi.org/10.15585/mmwr.mm6915e5>
- Herron, J. B. T., Hay-David, A. G. C., Gilliam, A. D., & Brennan, P. A. (2020). Personal protective equipment and Covid 19- a risk to healthcare staff? *British Journal of Oral and Maxillofacial Surgery*, 58(5), 500–502. <https://doi.org/10.1016/j.bjoms.2020.04.015>
- Hidayat, A. A. (2017). *Metodologi Penelitian Keperawatan dan Kesehatan [Methodology of Nursing and Health Research]*. Jakarta: SalembaMedika, 88.
- Indonesia, T. P. K. B. B. (2008). *Kamus besar bahasa Indonesia [Indonesian Thesaurus]*. Jakarta: BalaiPustaka
- Kemendes, R.I. (2020). *Direktorat Jenderal Pencegahan dan Pengendalian Penyakit Kementerian Kesehatan RI Tahun2020*.
- Kementerian Kesehatan Republik Indonesia. (2020). Corona virus disease 2019. Peraturan Menteri Kesehatan Republik Indonesia, Nomor 9 (Pedoman Pembatasan Sosial Berskala Besar dalam Rangka Percepatan Penanganan Corona Virus Disease 2019 (COVID-19) [Regulation of Ministry of Health of Republic of Indonesia No. 9 (Guidelines of National-scale Social Distancing in COVID-19 Quick Response and Treatment)], 2–6. <http://jurnalrespirologi.org/index.php/jri/article/view/101>
- Law, S., Leung, A. W., & Xu, C. (2020). Severe acute respiratory syndrome (SARS) and coronavirus disease- 2019 (COVID-19): From causes to preventions in Hong Kong. *International Journal of Infectious Diseases*, 94, 156–163. <https://doi.org/10.1016/j.ijid.2020.03.059>
- Liu, Q., Luo, D., Haase, J. E., Guo, Q., Wang, X. Q., Liu, S., Xia, L., Liu, Z., Yang, J., & Yang, B. X. (2020). The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. *The Lancet Global Health*, 8(6), e790–e798. [https://doi.org/10.1016/S2214-109X\(20\)30204-7](https://doi.org/10.1016/S2214-109X(20)30204-7)
- Madiyono, B., Moeslichan, S., Sastroasmoro, S., Budiman, I., & Purwanto, S. H. (2014). *Dasar-dasar metodologi penelitian klinis [Basics of Clinical Research Methodology]*. Edisi, 5, 352–386.
- Notoatmodjo, S. (2010). *Metodologi Penelitian Kesehatan [Health Research Methodology]*. Bina Pustaka.
- Pagliano, P., & Kafil, H. S. (2020). Protection and disinfection policies. *Le Inferzionoin Medicina*, 2 (April), 185–191.
- Prasetyono. (2020). Fighting against the common enemy of COVID-19: A practice of building a community with a shared future for mankind. *Infectious Diseases of Poverty*, 9(1), 4–9. <https://doi.org/10.1186/s40249-020-00650-1>
- Sharma, S. K., Mudgal, S. K., Panda, P. K., Gupta, P., & Agarwal, P. (2020). COVID-19: Guidance outlines on infection prevention and control for health care workers. *Indian Journal of Community Health*, 32(1), 9–16. <https://doi.org/10.47203/ijch.2020.v32i01.004>
- Sugiono, R. (2018). *METODOLOGI PENELITIAN SOSIAL. Suatu Pendekatan Teori Dan Praktis [Social Research Methodology: A Theoretical and Practical Approach]*. Alfabeta, Bandung.
- Susilo, A., Rumende, C. M., Pitoyo, C. W., Santoso, W. D., Yulianti, M., Herikurniawan, H., Sinto, R., Singh, G., Nainggolan, L., Nelwan, E. J., Chen, L. K., Widhani, A., Wijaya, E., Wicaksana, B., Maksum, M., Annisa, F., Jasirwan, C. O. M., & Yunihastuti, E. (2020). Coronavirus Disease 2019: Tinjauan Literatur Terkini [COVID-19: Updated Literature Review]. *Jurnal Penyakit Dalam Indonesia*, 7(1), 45. <https://doi.org/10.7454/jpdi.v7i1.415>
- Van Doremalen, N., Bushmaker, T., Morris, D. H., Holbrook, M. G., Gamble, A., Williamson, B. N., Tamin, A., Harcourt, J. L., Thornburg, N. J., & Gerber, S. I. (2020). Aerosol and surface stability of SARS-CoV-2 as compared with SARS-CoV-1. *New England Journal of Medicine*, 382(16), 1564–1567.
- Yan, Y., Shin, W. I., Pang, Y. X., Meng, Y., Lai, J., You, C., Zhao, H., Lester, E., Wu, T., & Pang, C. H. (2020). The first 75 days of novel coronavirus (SARS-CoV-2) outbreak: Recent advances, prevention, and treatment. *International Journal of Environmental Research and Public Health*, 17(7). <https://doi.org/10.3390/ijerph17072323>
- Ye, Z. W., & Jin, D. Y. (2020). Diagnosis, treatment, control and prevention of SARS-CoV-2 and coronavirus disease 2019: back to the future. *Shengwu Gongcheng Xuebao/Chinese Journal of Biotechnology*, 36(4), 571–592. <https://doi.org/10.13345/j.cjb.200115>
- Yuefei, J., Haiyan, Y., Wangquan, J., Weidong, W., Shuaiyin, C., Weiguo, Z., & Guangcai, D. (2020). *Virology, Epidemiology, Pathogenesis, and Control of COVID-19. Viruses*, 1–17.