

NURSING BEHAVIOUR AND PREVENTING COVID 19 TRANSMISSION: A CASE STUDY IN MERAUKE HOSPITAL PAPUA

Sulistiyani, Lamria Situmeang, Zeth Robert Felle, Eka Sriwahyuni

The Nursing Study Program, the Nursing Department, Poltekkes Kemenkes Jayapura

Email: is.listi83@gmail.com

Abstract

The Merauke hospital became a reference during the COVID-19 era for people living in Southern Papua - Merauke, Mappi, and Boven Digoel regencies. Thus, hospitals must prepare the nursing care staff in terms of cognition, psychomotor, and behavior in managing COVID-19. This research reviewed the nursing care behavior in preventing COVID-19 transmission at the Regional Hospital of Merauke. This cross-sectional study approach applied a total sampling technique, resulting in 60 nurses. The researchers distributed a questionnaire to collect cognitive, psychomotor, and behavioral data. From the findings, the researchers found 31 respondents, 51%, with very excellent behavior. Of those numbers, 22 respondents or 36.7% had excellent prevention while 9 respondents, or 15% had excellent prevention. From the total of 28 respondents, 46.7% had average behavior while sixteen respondents, or 26.7% had very excellent prevention. Respondents with excellent prevention consisted of 9 respondents, 15%. Respondents with average prevention consisted of 3 respondents, 5%. Then, respondents with low behavior and average prevention consisted of a respondent, 1.7%. The Chi-square obtained a p-value of 0.002, lower than 0.05. **Conclusion:** From the result, the researchers found the nursing behavior and COVID-19 and COVID-19 infection at Merauke Regional Hospital. The results also suggest managerial evaluation and supervision keep and improve the preventive behavior on COVID-19 transmission.

Keywords: COVID-19, Prevention, Infection, Nurses, Pandemic

INTRODUCTION

In late December 2019, the world encountered a shocking pneumonia disease transmission due to Coronavirus with a novel type - *Severe Acute Respiratory Syndrome Coronavirus 2*, SARS-CoV-2. The outbreak of Coronavirus was from Wuhan, a city in Hubei province. The virus was transmitted rapidly into China entirely. The World Health Organization labels the pandemic *Corona Virus Disease 2019*, COVID-19 (WHO, 2020). The signs and symptoms of COVID-19 infections include acute respiratory problems, fever, cough, and breathlessness. In the case of severe COVID-19, patients may develop their disease into pneumonia, acute syndrome, and mortality. The most reported sign and symptom of most cases was fever with some onset of breathlessness. The Rontgen checkup showed wide pneumonia infiltrate on both lungs (Direktur Jenderal Pencegahan dan Pengendalian Penyakit, 2020).

At the beginning of 2020, the pandemic spread rapidly to the whole world (PDPI, 2020). Eventually, the World Health Organization, officially declared the Corona Virus, COVID-19, a global pandemic on March 11, 2020. The virus, Coronavirus, spread entirely in the world (WHO, 2020). The confirmed positive cases on June 18, 2021, were 177.108.695 cases with a mortality rate of 3.840.223

Received Oktober 30, 2022; Revised November 2, 2022; Accepted November 28, 2022

(CFR 2.2%) in the infected countries and 149 transmitted communities (WHO, 2021). On the other hand, the number of infected medical staff due to COVID-19, on December 3, 2020, was 1.6 million workers from 34 countries, including nurses. The accumulated mortality rate of nurses due to COVID-19 was 2.262 from 59 countries (International Council of Nurses, 2021).

The number of Indonesian nurses exposed to COVID-19, according to Persatuan Perawat Nasional Indonesia - the National Association of Indonesia's Nurses (2021), kept increasing. The recorded rates were 15.000 infected nurses and 274 nurses died during the pandemic. In Papua, the numbers of medical staff infected by COVID-19 were 307 people (Satgas Penanganan COVID-19 Provinsi Papua, 2020). On the other hand, based on the data from the COVID-19 secretariat at Merauke Regional Hospital about the number of infected COVID-19, the COVID-19 rate increased. In 2020, the patients who suffered from COVID-19 were 11 people. Then, in April 2021, the rate increased to 42 patients infected by COVID-19.

Nurses have crucial roles in managing the pandemic because they are on the front line to provide health services for COVID-19-infected patients (Lie et al., 2020). Thus, they are vulnerable while carrying out their tasks. The disease transmission brought various risks for health staff when they did not prevent the transmission or apply the universal precaution by wearing self-protectors (Fajrah, 2019). Wang J et al. (2020) explain that direct exposures suffered by nurses happened due to long-exposure, lack of training, guidance, and monitoring about the prevention and COVID-19 infection management; and lack of COVID-19 infection preventive behaviors while working.

Wang J. et al. (2020) also found that health staff with inadequate cognition about COVID-19 would also have lower COVID-19 infection preventive behavior while providing services for the patients. These matters influenced the self-protective procedure. Bhagavathula et al. (2020) found that the availability of the whole world health staff had poor cognitive improvement regarding COVID-19 transmission. In Chitwan, Nepal, Nelap et al. (2020) found a percentage of 30.59% of health staff had excellent cognition about COVID-19. Their research also found a percentage of 15.01% of health staff had excellent attitudes toward COVID-19.

Siburian (2012) found that the nurses' attitudes, toward wearing self-protector, were still poor and tended to be negative, 53.30%. A study promoted in the surgical room of Moerwadi Regional Hospital, Surakarta, found a percentage of 60% of nurses had excellent behaviors in preventing nosocomial infection (Sulistiyowati, 2016). Another study in the inpatient room of Kendal Islamic Hospital found a percentage of 52.70% of nurses had excellent behavior in applying nosocomial infection (Puspasari, 2015). The preventive behavior of COVID-19 infection for health staff while working at a health service facility received some influence from various factors. One of them is the pre-dispositional factor. The pre-dispositional factor refers to a facilitative factor of individual behavior, such as cognition and psychomotor (Notoatmojo, 2010).

The preliminary study promoted by the researchers for the Emergency Care Unit nurses at Merauke Regional Hospital, on June 28, 2021, found 6 interviewed nurses were lack of COVID-19 infection prevention. From the interview, the results showed that COVID-19 infection prevention was limited to the protocol to wear a self-protector and wash hands. On the other hand, other infections, such as environmental cleanliness and patient care device, were neglected.

From the phenomena, the researchers focused this study to reveal the preventive behavior of COVID-19 infection at Merauke Regional Hospital.

METHOD

This observational correlation research applied to cross-sectional approach, by collecting the data for the dependent and independent variables, simultaneously at the same time. This research analyzed the correlation between cognitive and psychomotor attitudes in preventing COVID-19 infection at the hospital. The population consisted of all nurses working in ICU, 21 nurses; Omega unit with 22 nurses and the Alpha unit with 22 nurses. Thus, the whole population consisted of 60 nurses. In this research, the researchers applied purposive sampling. This sampling technique took the sample based on certain criteria (Sugiyono, 2011). The numbers of sample consisted of 60 nurses. The chi-square analysis with the SPSS program obtained a p-value to compare with the level of significance, 0.05. This research consisted of two variables. The correlation would be significant if the p-value was lower or equal to

0.05 and vice versa. A lower p-value than the significant level indicated that the statistics denied H_0 and accepted H_a .

RESULTS

The Respondent's Characteristics Descriptions

The researchers identified the respondent characteristics, such as the sex types, group of age, marital status, years of service, and educational level with univariate analysis. Then, the researchers described the frequency distributions of each characteristic.

Table 1. The Respondent Characteristics Description based on sex types, groups of ages, marital status, years of service, and educational levels at Merauke Regional Hospital

Variables	Category	Frequency	%
Sex types	Male	9	15
	Female	51	80
	Total	60	100.0
Age	20 – 29 years old	32	53,3
	30 – 39 years old	2	3,3
	40 – 49 years old	25	41,7
	Older than 50 years old	1	1,7
	Total	60	100.0
Marital status	Married	31	51,7
	Not married	29	48,3
	Total	60	100.0
Years of service	Longer than 5 years	33	55
	5 - 10 years	6	10
	10 - 15 years	19	37.7
	Older than 15 years old	2	3.3
	Total	60	100.0
Educational level	D3	51	85
	S1	9	15
	Total	70	100.0

Source: primary data

Table 1 shows most respondents are female, 51 nurses (85%). Most respondents are aged between 20 and 29 years old, 32 nurses or 53.8%. Most respondents are married, 31 nurses or 51.7%. Most respondents have more than 5 years of service, 33 nurses or 55%. Most respondents have a Diploma III of nursing degree, 51 nurses or 85%.

The respondent descriptions based on the COVID-19 behaviors of Merauke Regional Hospital

From the results, the researchers recapitulated the COVID-19 behaviors of the respondents as shown in Table 2.

Table 2 The Descriptions of Nurses' Behaviors and COVID-19 Preventions

The infection prevention behavior	Frequency	Percentage (%)
Cognition		
Excellent	28	46,7
Average	31	51,7
Low	1	1,7
Total	60	100
Attitude		
Excellent	24	40
Average	0	0
Low	28	60
Total	60	100
Perilaku		
Excellent	31	51,7
Average	28	46,7
Low	1	1,6
Total	60	100,0
COVID-19 Prevention		
Very Excellent	38	63,3
Excellent	18	30
Average	4	6,7
Total	60	100

Source: primary data

Table 2 shows that most respondents have average cognition, 31 nurses or 51.7%. Most respondents have a poor attitude category, 28 nurses or 60%. Most respondents have excellent behavior, 31 nurses or 51.7%. Most respondents have excellent COVID-19 prevention, 38 nurses or 63.3%.

The Correlation between the Nurses' Knowledge about COVID-19 and the COVID-19 Infection Prevention at Merauke Regional Hospital

Table 3 the Correlation between the Nurses' Knowledge about COVID-19 and the COVID-19 Infection Prevention at Merauke Regional Hospital

COVID-19 Prevention	COVID-19 Infection Prevention						p-value
	Very Excellent		Excellent		Average		
	n	%	n	%	n	%	
Excellent	21	36	7	11,7	0	0	0,001
Average	17	28.3	11	16.3	3	5	
Low	0	0	0	0	1	1.7	
Total	38	63.3	18	30	4	6.7	
Source: Primary Data							

Source: Primary Data

The table shows 28 respondents, 51%, with very excellent behavior. Of those numbers, 21 respondents or 36% have very excellent prevention while 7 respondents, or 11.7% had excellent prevention. From 31 respondents with average cognition, the table shows 17 respondents have very excellent preventive action, 28.3%. The respondents with very excellent prevention consist of 11

respondents, 16.3%. Respondents with average prevention are three respondents, 5%. Then, the respondent with poor cognition and average prevention action one respondent, 1.7%. From the chi-square test, the obtained p-value was 0.000, lower than 0.05. Thus, H_0 was denied. From the result, the researchers ensured that no correlation between the nurses' behaviors regarding COVID-19 and the COVID-19 infection prevention

The Correlation between the Nurses' Attitudes about COVID-19 and the COVID-19 Infection Prevention at Merauke Regional Hospital

Table 4 the Correlation between the Nurses' Attitudes about COVID-19 and COVID-19 infection prevention at Merauke Regional Hospital

The COVID-19 Attitudes	Infection Prevention Of COVID-19						p-value
	Very Excellent		Excellent		Average		
	N	%	n	%	n	%	
Excellent	16	26.7	7	11.7	1	1.7	0,797
Low	22	36,7	11	18.3	3	5	
Total	38	63.3	18	30	4	6.7	

Source: Primary data

Table 4 shows, from 28 respondents with excellent cognition and very excellent COVID-19 infection prevention, 21 respondents or 36% have very excellent prevention while 7 respondents, or 11.7% had excellent prevention. Of 31 respondents with average cognition and very excellent preventive action, 17 respondents have very excellent preventive action, 28.3%. The respondents with very excellent prevention consist of 11 respondents, 16.3%. Respondents with average prevention are three respondents, 5%. Then, a respondent with poor cognition and average prevention action is one respondent.

From the chi-square test, the obtained p-value was 0.000, lower than 0.05. Thus, H_0 was denied. The result indicated the correlation between the nurses' knowledge of COVID-19 and COVID-19 infection prevention.

The Correlation between the Nurses' Behavior about COVID-19 and the COVID-19 Infection Prevention at Merauke Regional Hospital

Table 5 the Correlation between the Nurses' Behaviors of COVID-19 and the COVID-19 Infection Prevention at Merauke Regional Hospital

COVID-19 behavior	Infection Prevention Of COVID-19						p-value
	Very Excellent		Excellent		Average		
	n	%	n	%	n	%	
Excellent	22	36.7	9	15	0	0	0,002
Average	16	26.7	9	15	3	5	
Low	0	0	0	0	1	1.7	
Total	38	63.3	18	30	4	6.7	

Source: Primary data

Table 5 shows that 31 respondents, 51%, have excellent behavior. Twenty-two respondents of 36.7% have very excellent prevention. Nine respondents or 15% have excellent prevention. From the total of 28 respondents, 46.7% had average behavior while sixteen respondents, or 26.7% had very excellent prevention. Respondents with excellent prevention consisted of 9 respondents, 15%. Respondents with average prevention consisted of 3 respondents, 5%. Then, respondents with low behavior and average prevention consisted of a respondent, 1.7%. The Chi-square result obtained a p-value of 0.002 lower than 0.05. Thus, the result denied H_0 . Thus, the result asserted no correlation between the nurses' behaviors regarding COVID-19 and the infection prevention of COVID-19.

DISCUSSION

The Chi-square result obtained a p-value of 0.002, lower than 0.05. Thus, the result denied H_0 . From the result, the researchers ensured that no correlation between the nurses' behaviors regarding COVID-19 and COVID-19 infection prevention. Cyrus et al (2021) also found no correlation between nurses' behaviors and COVID-19 infection prevention. However, other studies found a strong correlation between nurses' behaviors and COVID-19 infection prevention, example Helena (2021).

Zaki et al., (2018) also found a correlation between the nurses' compliance in wearing self-protectors while working and infection prevention at Dr. RM. Pratomo Bagansiapiapi, Rokal Hilir Regency. Ismawati et al., (2020) also found a correlation between cognition and the nurses' behavioral compliance level in promoting COVID-19 prevention and infection prevention behavior.

Those researchers also found that social-distancing implementation to sever the COVID-19 transmission, as mandated by the Government Rule of East Java, 2020, had a positive correlation toward infection prevention behavior in the Great Surabaya area.

Marlia & Masthura (2021) also found a correlation between the behavior and availability of APD toward the COVID-19 prevention efforts with a p-value of 0.000. Thus, health staff should upgrade their knowledge about COVID-19 and prevention efforts by having a vaccination. These actions could lower related anxieties with COVID-19. Thus, the infection risks will decrease.

Based on Bloom's taxonomy, the cognitive capability of humans is observable from the intellectual aspect, such as the cognition and psychomotor of the nurses related to the full implementation of self-protector. This aspect is observable from the cognitive, psychomotor, and

behavioral aspects of the nurses regarding the functions of the full self-protectors in preventing COVID-19. Magdalena et al., (2020) explain that cognitive mastery is observable from intellectual aspects, such as cognition and thinking skills. Thus, the preventive efforts of nurses include applying health protocols, for example washing their hands and wearing full self-protectors.

(Suti Ismawati et al., 2020) found that washing hands became a priority in preventing nosocomial infection. This action could kill up to 36% of microorganisms on hands, provided by using flowing water and applying soap. Lower amounts of microorganisms led to lower cross-transmission. The same matter was also observable when an individual wore complete self-protectors.

Zaki et al., (2018) found 57% of nurses did not obey the protocol of wearing complete self-protectors while working due to a lack of excellent cognition. The nurses seemed careless with the important information about wearing self-protectors. They also never joined training about self-protector implementations. Higher individual cognition should lead to higher information acceptance.

Azzahri & Ikhwan (2019) also found a percentage of 40.8% of nurses did not obey the protocol of wearing full self-protectors on the job. Respondents with excellent cognition but a lack of compliance in wearing self-protectors had lower awareness about the importance of full self-protector implementation. These respondents assumed that the implementation of full self-protectors should be only for emergency state conditions. On the other hand, respondents with low cognition about wearing self-protectors were still wearing the protectors during the job, especially while having contact with patients. These respondents were afraid of being transmitted once they did not wear the protectors.

Putri et al., (2018) found a percentage of 48.3% of nurses did not obey the implementation of full self-protectors at Kariadi Regional Hospital, Semarang. Marlina et al., (2021) also found four health staff did not obey the implementation of full self-protectors. The characteristics of the disobedient health staff were lack of self-protector knowledge, at the age of younger adult period, being female, and working with less than 10 years of service. Setyawan et al. (2020) found that this disobedience in wearing full self-protectors was due to job behavior and managerial policy. Okamoto et al (2016) found various contributors to the lack of cognition in wearing self-protectors, such as workload, underestimating the importance of self-protector, underestimating the risk, and lack of correct self-protector knowledge.

The implementation of full self-protector for nurses is useful to prevent infection due to contact with patients. This implementation was also useful for visitors with contact with the patients (Zaki et al., 2018).

From the discussion, the researchers concluded that COVID-19 prevention received various influences from the nurses' cognitive levels in preventing COVID-19 and infection prevention during the pandemic period, the COVID-19 preventive behavior by wearing self-protector, disobedience in wearing self-protector, lack of understanding about the importance of wearing self-protector, lack of understanding about nosocomial infection risk prevention, lack of understanding about the increased health risk case for health staff, lack of socialization and training in wearing self-protectors, lack of COVID-19 infection preventive behavior, and lack of supervision and evaluation from the management about wearing self-protectors.

CONCLUSION

From the findings and discussion, the researchers found 31 respondents, 51%, with very excellent behavior. Of those numbers, 22 respondents or 36.7% had excellent prevention while 9 respondents, or 15% had excellent prevention. From the total of 28 respondents, 46.7% had average behavior while sixteen respondents, or 26.7% had very excellent prevention. Respondents with excellent prevention consisted of 9 respondents, 15%. Respondents with average prevention consisted of 3 respondents, 5%. Then, respondents with low behavior and average prevention consisted of a respondent, 1.7%. The researchers also found a correlation between the nurses' behaviors and COVID and COVID-19 infection prevention at Merauke Regional Hospital. Thus, the researchers suggested that nurses improve their service quality and discipline. The managerial party should supervise and evaluate the implementation of self-protectors at Merauke Regional Hospital.

REFERENCE

- Azzahri, L. M., & Ikhwan, K. (2019). Hubungan Pengetahuan Tentang Penggunaan Alat Pelindung Diri (Apd) Dengan Kepatuhan Penggunaan Apd Pada Perawat Di Puskesmas Kuok. *Prepotif Jurnal Kesehatan Masyarakat*, 3(1).
- Magdalena, I., Islami, N. F., Rasid, E. A., & Diasty, N. T. (2020). Tiga Ranah Taksonomi Bloom Dalam Pendidikan. *Jurnal Edukasi Dan Sains*, 2, 132–139.
- Marlina, R., Syam, Y., & Bahtiar, B. (2021). Analisis Kepatuhan Penggunaan Alat Pelindung Diri Dalam Pelaksanaan Cegah Tangkal Penyakit Covid-19 Di. *Alauddin Scientific Journal Of Nursing*, 1(2), 113–126.
- Putri, S. A., Widjanarko, B., & Shaluhiah, Z. (2018). Faktor-Fakto Yang Berhubungan Dengan Tingkat Kepatuhan Perawat Terhadap Penggunaan Alat Pelindung Diri (Apd) Di Rsup Dr. Kariadi Semarang (Studi Kasus Di Instalasi Rawat Inap Merak). *Jurnal Kesehatan Masyarakat (E-Journal)*, 6, 800–808.
- Suti Ismawati, N. D., Supriyanto, S., & Haksama, S. (2020). Hubungan Persepsi Petugas Kesehatan Dengan Kepatuhan Terhadap Upaya Pencegahan Penyebaran Wabah Covid-19 Di Area Gbpt Rsud Dr. Soetomo. *Comphi Journal: Community Medicine And Public Health Of Indonesia Journal*, 1(2), 101–108. <https://doi.org/10.37148/Comphijournal.V1i2.17>
- Yana Marlia, Syarifah Masthura, Y. P. (2021). The Relationship Between The Availability Of Ppe And Knowledge On The Anxiety Of Health Worked In Prevent Covid-19. *Idea Nursing Journal*, Xii(2), 14–18.
- Zaki, M., Ferusgel, A., & Siregar, D. Maya S. (2018). Faktor – Faktor Yang Memengaruhi Penggunaan Alat Pelindung Diri (Apd) Tenaga Kesehatan Perawat Di Rsud Dr. Rm. Pratomo Bagansiapiapi Kabupaten Rokan Hilir. *Excellent Midwifery Journal*, 1(2), 85–92.
- A.Wawan & Dewi M. 2011. *Teori Dan Pengukuran Pengetahuan, Sikap, Dan Perilaku Manusi*. Cetakan II. Yogyakarta : Nuha Medika.
- Aminudin, M. (2016). Hubungan antara Pengetahuan dan Sikap dengan Perilaku Konsumsi Jajanan Sehat di MI Sulaimaniyah Mojoagung Jombang. *Revista Brasileira de Ergonomia*, 9(2), 10. <https://doi.org/10.5151/cidi2017-060>.
- Bhagavathula, A. S., Aldhaleei, W. A., Rahmani, J., Mahabadi, M. A., & Bandari, D. K. 2020. *Knowledge and Perceptions of COVID-19 Among Health Care Workers: Cross-Sectional Study*. *JMIR Public Health and Surveillance*, 6(2), e19160. <http://dx.doi.org/10.2196/19160>
- Centers for Disease Control and Prevention (CDC), 2020. *Coronavirus Disease 2019: How It Spreads*. Online. Diakses di: <https://www.cdc.gov/coronavirus/2019-ncov/about/transmission.html>. pada tanggal 02 Juli 2021.
- DINKES Provinsi Papua. 2021. “Data Covid-19 Provinsi Papua”. Diakses pada <https://covid19.papua.go.id/> pada tanggal 02 Juli 2021.
- Direktorat Jenderal Kefarmasian dan Alat Kesehatan, 2020. *Standar Alat Pelindung Diri (APD) Dalam Manajemen Penanganan Covid-19*. Jakarta: Kementerian Kesehatan Republik Indonesia.
- Fajrah, S. (2019). Pengetahuan dan Sikap Perawat tentang Penggunaan Alat Pelindung Diri (APD) di Puskesmas Sausu Kabupaten Parigi Moutong. *Jurnal Ilmiah Kesmas IJ (Indonesia Jaya)* Vol.19 No.1, 1–8.
- Helena Keicya Feinina Pasaribu, (2021). Hubungan antara Pengetahuan dan Sikap mengenai COVID-19 dengan Perilaku Pencegahan Infeksi saat Bekerja pada Tenaga Kesehatan dan Non-Kesehatan di Puskesmas di Zona Merah di Kota Medan dan Kota Batam selama Pandemi COVID-19. Skripsi. <http://repositori.usu.ac.id> diakses 24/11/2021
- Helena Golang Nuhan dan Hidayat Turochman, (2021). Hubungan Pengeathuan dan Sikap Mahasiswa Program Studi DII Keperawatan Terhadap Kepatuhan Penggunaan Alat Perlindungan Diri

- pada Saat Pandemi Covid-19. *Jurnal Ilmiah Kesehatan Vol (13) No(1), Hal; 129-139.* <https://doi.org/10.37012/jik.v1i1465> diakses 26/12/2021
- International Council of Nurses. 2021. Covid-19 Infections And Deaths Among Nurses And Other Healthcare Workers. Di akses di <https://www.icn.ch/sites/default/files/inline-files/ICN%20COVID19%20update%20report%20FINAL.pdf> pada tanggal 20 Juli 2021.
- Kementerian Kesehatan Republik Indonesia, 2020. *Pedoman Pencegahan dan Pengendalian Coronavirus Disease (COVID-19)*. Jakarta: Kemenkes RI.
- Li Q, Guan X, Wu P, Wang X, Zhou L, Tong Y, et al. *Early transmission dynamics in Wuhan, China, of novel coronavirus infected pneumonia*. N Engl J Med. 2020;382(13):1199–207.
- Nepal, R. et al., 2020. Knowledge, attitude and practice regarding COVID-19 among healthcare workers in Chitwan, Nepal.
- PDPI, 2020, *Pneumonia COVID-19 Diagnosis dan Penatalaksanaan di Indonesia*, Perhimpunan Dokter Paru Indonesia Vol. 55, diakses 06 Juli 2021, <https://doi.org/10.1331/JAPhA.2015.14093>.
- Peraturan Menteri Kesehatan RI. Nomor 27 tahun 2017 tentang *Pedoman Pencegahan dan Pengendalian Infeksi di Fasilitas Pelayanan Kesehatan*. Jakarta: Kemenkes RI.
- Peraturan Menteri Kesehatan RI. Nomor HK.01.07/ MENKES/ 413/ 2020 tentang *Pedoman Pencegahan dan Pengendalian Coronavirus Disease (COVID-19)*. Jakarta: Kemenkes RI.
- Peraturan Menteri Kesehatan RI. Nomor 9 tahun 2020. *Peraturan Menteri Kesehatan tentang Pedoman Pembatasan Sosial Berskala Besar Dalam Rangka Percepatan Penanganan Corona Virus Disease 2019*. Kemenkes RI.
- Perhimpunan Dokter Paru Indonesia (PDPI), Perhimpunan Dokter Spesialis Kardiovaskular Indonesia (PERKI), Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia (PAPDI), Perhimpunan Dokter Anestesiologi dan Terapi Intensif Indonesia (PERDATIN), Ikatan Dokter Anak Indonesia (IDAI), 2020, *Protokol Tatalaksana COVID19 Perhimpunan Dokter Paru Indonesia*, 2020, *Tatalaksana Pasien COVID-19*
- Puspasari Y. 2011. *Hubungan Pengetahuan, Sikap Dengan Praktik Perawat Dalam Pencegahan Infeksi Nosokomial Di Ruang Rawat Inap Rumah Sakit Islam Kendal*. J Keperawatan Vol. 8 No. 1, pp. 23-43
- Siburian, Apriani 2012. *Gambaran Penggunaan Alat Pelindung Diri (APD) terhadap Keselamatan Pasien Kerja Perawat IGD RSUD Pasar Rebo tahun 2012*”. Skripsi. Fakultas Ilmu Keperawatan Univ Indonesia
- Sulistiyowati. 2016. *Hubungan Tingkat Pengetahuan Dan Sikap Perawat Tentang Infeksi Nosokomial (INOS) Dengan Perilaku Pencegahan Inos Di Ruang Bedah RSUD Dr. Moewardi*. Jurnal Keperawatan global : Volume 1 No 1.
- Tim Kerja kemenkes. (2020). *Pedoman Kesiapsiagaan Menghadapi Infeksi Novel Coronavirus (2019-Ncov)*. Kementerian Kesehatan RI Direktorat Jenderal Pencegahan dan Pengendalian Penyakit Direktorat Surveilans dan Karantina Kesehatan Sub Direktorat Penyakit Infeksi Emerging : Jakarta
- Wang J, Zhou, M. & Liu, F., 2020. Reasons for healthcare workers becoming infected with novel coronavirus disease 2019 (COVID-19) in China. *The Journal of Hospital Infection*.
- WHO. (2020). *Coronavirus disease 2019 (COVID-19) situation report-94*. WHO.
- WHO. (2020, Februari 11). WHO Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020. Retrieved Juli 29, 2020, from <https://www.who.int/dg/speeches/detail/who-director-general-sremarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020>.
- Zhengjiang Jin, Lan Luo, Xinyun Lei, Wen Zhou, Zhenhui Wang, Lu Yi dan Nian Liu. 2020. *Knowledge, Attitude, and Practice of Nurses Towards the Prevention and Control of COVID-19*. ResearchGate. <https://www.researchgate.net> diakses 24/11/2021