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THE RELATIONSHIP OF INDIVIDUAL, PSYCHOLOGICAL AND ORGANIZATIONAL FACTORS WITH NURSES' HAND HYGIENE ADHERENCE

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ABSTRACT

The background of low hand hygiene adherence is a problem where this is important to maintain the quality and safety of patients in hospitals. Individual factors, psychological factors and organizational factors influence adherence with five moments hand hygiene which is still low. The aim of this research was to identify factors related to nurses' adherence in implementing the five moments hand hygiene. The correlational analytical research method with a cross-sectional approach was carried out at RSUD Sumedang at November 2023 with samples of 123 nurses. The questionnaire used was based on Herzbergh's motivation theory and the Manchester Clinical Supervison Scale 26-item (MCSS-26). Univariate analysis with frequency distribution, bivariate test using Chi Square, and multivariate analysis with logistic regression. The results show that there is dominant influencing factors supervision (3.178), attitude (2.921) and knowledge (0.138). The conclusion of this research is that there is a relationship between individual factors, psychological factors and organizational factors on adherence with five moments hand hygiene . The dominant influencing factors are supervision, attitude and knowledge. Suggestions for increasing knowledge through education and training as well as regular feedback, giving rewards to increase motivation. Increased supervision through strengthening the functions of IPCLN and IPCN.

Keywords: adherence; hand hygiene; nurses; individual factors; organizational factors; psychological factors

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INTRODUCTION

Hand hygiene is an effective effort to prevent health care-related infections. Prevention of infection transmission in hospitals can be achieved well if health workers have a level of *hand hygiene adherence* according to standards. The phenomenon that officers comply with *hand hygiene* is still considered low. *Hand hygiene* adherence worldwide ranges between 40% and 50% (An & Yang, 2020) . The average adherence of health workers in Southeast Asia, such as Vietnam, is 31%, the Philippines is 11% and Indonesia is 36%. This data shows that the level of health workers' adherence with *hand hygiene protocols is still low* (Ece et al., 2021) . Research is consistent with the fact that factors related to nurses' adherence in implementing *hand hygiene* are motivation, availability of facilities and supervision of the head of the room, while knowledge and attitudes have no relationship to *hand hygiene adherence.* (Risti & Dewi, 2017) . This research is supported by Lailawidar (2022) that there is a significant relationship between education, employee status, training, experience or years of work, knowledge, attitudes and appreciation with the adherence of health workers in implementing infection prevention in the emergency room, ICU, NICU and delivery room. However, there

is no significant relationship between age and gender and officer adherence. The most dominant factor influencing adherence is the reward/reward variable.

Low levels of *hand hygiene adherence* cause the incidence of HAIs (*Healthcare Associated Infections*). HAIs are infections that occur during the treatment process in hospitals or other health care settings that were not yet visible or were not in the incubation period when the patient first entered the hospital or only appeared after the patient left the hospital , including occupational infections that occurred in staff at the Hospital (Kemenkes RI, 2017). The incidence of HAIs in hospitals in 2022 reached 2.19%, with the highest infection rate occurring in *Ventilator Associated Pneumonia (VAP)*, reaching 7.04 ‰. Research explains that the factor causing the incidence of VAP is *hand hygiene* that is not in accordance with standards (Azis & Parwati, 2013). The incidence of infection increases the burden on hospitals because the length of patient care days affects the use of *hand hygiene facilities* , especially the increased use of *handrub*. Nurses play an important role in infection control in hospitals. Nurses are medical personnel who provide 24-hour service with the patients being treated. Nurses are required to have good knowledge and skills in caring for patients. Nurses' adherence in carrying out appropriate procedures when carrying out nursing actions, including *hand hygiene procedures*, is one of the determinants of success in preventing infections related to health care (Abdella et al., 2014).

The role of hospital management through the infection prevention and control committee (PPI) is responsible for the infection prevention and control program. Identifying resources, availability of facilities and infrastructure and providing education and training to staff regarding infection prevention and control programs. Strategies to increase compliance with standard precautions and hand hygiene require leadership, commitment and resources (Ghorbanmovahhed et al., 2023). Lawrance Green in (Notoatmodjo, 2014) explains that human behavior is influenced by three main factors, namely predisposing factors which include knowledge, attitudes, beliefs. Supporting factors include the availability of facilities or infrastructure. Driving factors include the attitudes and behavior of nursing staff. Gibson et al., (2015) argue that there are three factors that influence performance, which influence a person's behavior, namely individual factors, psychological factors and organizational factors. Based on the explanation above, it is necessary to identify factors that influence nurses' adherence in implementing *five moments of hand hygiene* based on individual factors, psychological factors and organizational factors. The aim of this research is to identify factors related to nurse compliance in implementation five moment hand hygiene.

METHOD

Correlational analytical research with a *cross-sectional approach*. The sample used *a cluster sample* of one hundred and twenty-three nurses. Inclusion criteria were nurses working at least one year. Sample exclusion criteria, nurse which his status is currently an internship and is on leave. Measuring tools use a knowledge questionnaire, Herzbergh's intrinsic and extrinsic motivation questionnaire *with validity test motivator faktor* 0,458 and *hygiene faktor* 0,492. The *Manchester Clinical Supervison Scale 26-item (MCSS-26) questionnaire with validity test* 0,361. Univariate analysis uses frequency distribution, bivariate analysis uses Chi Square, and multivariate analysis uses logistic regression.

RESULTS

Table 1.
Description of Individual Factors, Psychological Factors, Organizational Factors (n=123)

	No.	Sub variables	Category	f	%
Individual Factors	1.	Knowledge	Enough	2 9	23.6
			Good	94	76.4
			Total	123	100
	2.	Education	D III Nursing	85	69.1
			Bachelor's Degree in Nursing	38	30.9
			Total	123	100.0
	3.	Years of service	< 5 years _	31	25.2
			≥ 5 years	92	74.8
			Total	123	100
	4.	Attend training	No training yet	73	59.3
			Already training	50	40.7
			Total	123	100
Psychological Factors	1.	Motivation	Low	48	39.0
			Tall	75	61.0
			Total	123	100
	2.	How are the respondents ?	Negative	45	36.6
			Positive	78	63.4
			Total	123	100
Organizational Factors	1.	Availability of facili & equipment hand hygiene facilit	Incomplete _	45	36.6
			Completely available	78	63.4
			Total	1 23	100
	2.	Supervision from IPCN and IPCLN	Not enough	51	41.5
			Good	72	58.5
			Total	123	100

The characteristics of respondents in table 1 were obtained from 123 respondents, dominated by women 74.8%. More than half of the respondents were of productive age, 51.2%, with the employment status of 69.9% of BLUD staff. Most of the respondents 76.4 % had good knowledge, and 69.1% Diploma III in Nursing. More than half of the working period is 74.8 % who have worked for more than five years. As for those who have not participated in PPI training, more than half, namely 59.3 %, as many as 60.2 % show high motivation , more than half 63.4 % have a positive attitude f. More than half 63.4 % said the availability of hand hygiene facilities and equipment in each room is complete , and more than half 58.5% said the supervision activities were carried out well.

Table 2.
Description of Nurses' Level of Adherence in Implementing Five Moment Hand Hygiene (n=123)

Dependent Variable	Category	f	%
Nurse adherence in five moments of hand hygiene	Not obey	45	36.6
	P obedient	78	63.4
	Total	123	100

Table 2, it was found that the level of nurse adherence explained that more than half of the respondents, 63.4 % of nurses, were categorized as compliant in implementing the five moments of hand hygiene.

Table 3.
Relationship of Individual Factors, Factors Psychology, Organizational Factors with Nurse Adherence in Implementing Five Moment Hand Hygiene

		Five Moment Adherence Hand Hygiene				Total	%	OR	p*
		Not obey		Obedient					
		f	%	f	%				
Knowledge	Individual factors								
	Enough	22	75.9	7	24.1	29	100	1	0,000 *
	Good	23	24.5	71	75.5	94	100	9.7	
	Total	45	36.6	78	63.4	123	100		
Education	D-III Kep	33	38.8	52	61.2	85	100	1, 375	0.441 * _
	SI Kep+Ners	12	31.6	26	68.4	38	100		
	Total	45	36.6	78	63.4	123	100		
Years of service	< 5 years	11	35.5	20	64.5	31	100	1	0.883*
	≥ 5 years	34	37.0	58	63.0	92	100	1.06	
	Total	45	36.6	78	63.4	123	100		
Training	Not yet	33	45.2	40	54.8	7 3	100	2,613	0.0 16 *
	Already	12	24.0	38	76.0	5 0	100		
	Total	45	36.6	78	63.4	123	100		
	Psychological factors								
Motivation	Low	29	59.2	20	40.8	45	100	5,256	0,000*
	Tall	16	21.6	58	78.4	78	100		
	Total	45	36.6	78	63.4	123	100		
Attitude	Negative	28	62.2	17	37.8	45	100	5, 910	0,000 *
	Positive	17	21.8	61	78.2	78	100		
	Total	45	36.6	78	63.4	123	100		
	Organizational Factors								
Infrastructure	Incomplete	2 3	51.1	22	48.9	45	100	2,661	0.0 11 *
	Completely available	2 2	28.2	5 6	71.8	5 6	100		
	Total	45	36.6	78	63.4	123	100		
Supervision	Not enough	30	58.8	21	41.2	5 1	100	5, 429	0,000*
	Good	15	20.8	57	79.2	7 2	100		
	Total	45	36.6	78	63.4	123	100		

Table 3 can be seen that, there is a significant relationship between the knowledge factor and nurses' adherence in implementing the five moments of hand hygiene (p=0.000). There is no significant relationship between education and nurses' adherence in implementing the five moments of hand hygiene (p= 0.441). There is no significant relationship between length of service and nurses' adherence in implementing five moments of hand hygiene (p= 0.883). There is a significant relationship between PPI training and nurses' adherence in implementing the five moments of hand hygiene with (p= 0.016). There is a significant relationship between motivation and nurse adherence in implementing the five moments of hand hygiene (p= 0.000). There is a significant relationship between attitudes and nurses' adherence in implementing the five moments of hand hygiene (p= 0.000). There is a significant relationship between the availability of hand hygiene infrastructure and nurses' adherence in implementing the five moments of hand hygiene (p= 0.011). There is a significant relationship between supervision factors and adherence nurses in implementing five moment hand hygiene (p= 0.000).

Table 4.
Results of Multivariate Analysis of Factors That Influence Nurses ' Adherence in Implementing Five Moment Hand Hygiene

	Variable	B	Sig.	Exp(B)	OR (95% CI)
Step 1	Knowledge	-1,884	,001	,152	0.103 (0.5 1 -0.4 50)
	PPI training	.411	.401	1,508	2,613 (0,578 - 3,934) _ _
	Motivation	,286	,613	1,331	5,256 (0.439-4.033)
	Nurse's attitude	,934	,075	2,545	5,910 (0.909-7.125)
	Infrastructure _	,340	,519	1,405	2,661 (0.500-3,949)
	Supervision	,901	,096	2,462	5, 429 (0.853-7.108)
	Constant	1,349	.102	3,854	
Step 2	Knowledge	-1,935	,000	.144	0.103 (0.049 -0.42 2)
	PPI training	,429	,379	1,536	2,613 (0,590 -4,001) _ _ _
	Nurse's attitude	1,014	,043	2,757	5,910 (1.0 32 -7.3 65)
	Infrastructure _	,416	,410	1,516	2,661 (0 , 5 63 - 4.0 79)
	Supervision	,968	,065	2,633	5, 429 (0.940-7.374)
	Constant	1,435	,076	4,199	
Step 3	Knowledge	-1,919	,000	,147	0.103 (0.5 1 -0.42 6)
	PPI training	,487	.311	1,627	2, 613 (0 , 6 34 -4.1 77)
	Nurse's attitude	1,016	.041	2,762	5,910 (1,043 -7, 315)
	Supervision	1,117	.023	3,057	5, 429 (1.1 67 -8.007)
	Constant	1,560	,049	4,760	
Step 4	Knowledge	-1,983	0,000	0.138	0.103 (0.048-0.395)
	Nurse's attitude	1,072	0.028	2,921	5,910 (1,122- 7,604)
	Supervision	1,156	0.017	3,178	5, 429 (1,231- 8,207)
	Constant	1,774	0.020	5,894	

Can be identified based on table 4, the first step is that all selection variables enter modeling. In the first stage motivation is issued, then infrastructure is issued and finally PPI training is issued. Based on the results of the analysis, several dominant factors influence nurses' adherence in implementing the five moments of hand hygiene respectively, these are supervision factors (OR= 3.178), nurses' attitudes (OR= 2.921), and nurses' knowledge (OR= 0.138).

DISCUSSION

The research results showed that more than half of the respondents did not comply with the implementation of *the five moments of hand hygiene*. Bivariate analysis shows that there is a relationship between knowledge, training, motivation, attitude, infrastructure and supervision with adherence with *five moments of hand hygiene*. The most dominant influencing factors are knowledge, attitude and supervision. Knowledge is a very important domain for of a person's actions (Notoatmodjo, 2014) . The study explains that the respondents' knowledge was 67.2% lacking and the results of the analysis showed that there was a relationship between knowledge and *hand hygiene compliance* (Damanik, 2012). Knowledge has the characteristic that it must be updated or maintained, so it is necessary to provide regular understanding or training and feedback to be able to maintain this knowledge. It is necessary to increase procedural knowledge where this knowledge includes how a person performs in carrying out the steps in a process (Rofli, 2021) . The better the respondent's knowledge, the better the respondent's attitude in implementing *the five moments of hand hygiene*.

Knowledge is a very important element in forming a person's actions. The level of knowledge about hand hygiene is not only limited to its implementation but also includes indications and implementation techniques. Nurses' knowledge about hand hygiene as an effort to improve service quality (Nurahmani, 2018). Health workers' knowledge increased in all locations after educational sessions (Allegranzi et al., 2013). According to Notoatmodjo (2014) a person's education will influence differences in knowledge, so that education influences the learning

process, the higher a person's education, the higher their ability to perceive information and the easier it will be to receive information. The level of education influences good performance for employees. Higher education is expected to perform well compared to those with low education (Mangkunegara, 2019).

This research shows that there is no relationship between education and *hand hygiene adherence*, it is possible that there are stronger factors that influence *hand hygiene adherence*. In line with the research results, *the chi square* test results obtained a p-value of 0.136, which concluded that there was no relationship between education and hand washing adherence among health workers. Respondents who did not comply with washing their hands were in the SPK and diploma group, namely 67.4% compared to the group of respondents with a bachelor's degree, namely 45.8%. (Amalia, 2016) . The education obtained by an individual will influence a person's abilities. Individuals with a higher level of education are assumed to have better knowledge and skills in the ability to complete work. Someone who is highly educated tends to have better performance (Notoatmodjo, 2014) .

Education and training contribute to increasing a person's knowledge and understanding so that it will influence adherence in implementing *the five moments of hand hygiene.* Education and training are directly proportional to a person's knowledge and understanding, thus determining whether a person will comply with *the five moments of hand hygiene.* This research is in line with research conducted by Aulia & Sasmita (2014) stating that to improve competence and performance and more specifically in terms of infection prevention and control, efforts can be made to increase knowledge through continuous education and training. To strengthen *hand hygiene adherence*, education and training for nurses is carried out continuously on a regular basis. Studies that support this research show that the implementation of training for nurses is very effective. It is hoped that training can be maintained and it is necessary to monitor the use of epi info, so that it is sustainable so that nurses can implement knowledge about HAIs surveillance (Hapsari et al., 2018). The research results show that nurses' good knowledge about nosocomial infections makes nurses obedient in implementing five moments of hand hygiene (Anugrahwati & Hakim, 2019).

Attitudes are obtained from the process of experience, learning, identification of the individual himself. Attitude is a positive or negative feeling or mental state that is always prepared, studied and regulated through observation which has a special influence on a person's response to other people. Attitude involves opinions and emotions within a person (Fitriany et al., 2016). A person who has a positive attitude is associated with good motivation as an encouragement to behave. Positive attitudes of nurses tend to have a good understanding of *hand hygiene* , have awareness of the importance of *hand hygiene* for the safety of patients and nurses. Attitudes are formed from the components of trust or confidence in an object, emotional life or assessment of an object and the tendency to act (Notoatmodjo, 2014) .

The nurse's positive attitude towards performing *hand hygiene* is related to the nurse's high motivation. The higher the motivation, the more positive the attitude will be. There is a fairly strong relationship between motivation and nurses' adherence in performing hand hygiene with a value of p = 0.012 (<0.05), r = 0.433 (Parwa et al., 2019). In line with research conducted by Komariah et al., (2016), that motivation influences officer adherence in implementing infection prevention and control. The research results show that the level of motivation is in line with the resulting performance, if motivation is high, then performance is good and vice versa. The statistical test results obtained (p=0.000) This means that there is a relationship between motivation and nurse performance (Abdulah et al., 2016) . Attitudes will

not be realized if they are not supported by infrastructure. The availability of facilities and infrastructure can influence nurses' interest in carrying out *hand hygiene* so that nurses are aware and care about their health. In this way, individuals will feel responsible and make good use of the available facilities. One of the keys to success in implementing a *hand hygiene program* in a hospital is the availability of *hand hygiene (hand rub) facilities* at every service point in the hospital (Idris, 2022). Availability of functional and easily accessible hand washing facilities it is very important to ensure hand washing compliance. The main barriers reported in undertaking HH are insufficient supplies (57.9%), skin reactions (26.3%), workload (26.3%) and lack of facilities (22.7%) (Harun et al., 2023).

Efforts to improve service quality are very important in optimizing nurses' adherence in implementing *hand hygiene* for infection prevention and control. If supervision is good, then performance will be good. Supervision carried out objectively by the head of the room aims to develop the staff. The results of this study are supported by the existence of a fairly strong relationship between the supervision of the head of the room and nurses' adherence in carrying out *hand hygiene* with a value of p = 0.014 (<0.05), r = 0.423 (Parwa et al., 2019). Supervision can influence the condition of nurses in generating, directing and maintaining *hand hygiene behavior.* The aim of this supervision is to improve the quality of service, provide assistance, improve nurses' abilities in implementing *hand hygiene* . Implementation of supervision is not only to monitor whether nurses have implemented *hand hygiene* according to standards or not, but also with regular supervision from the head of the room, they can find problems that can be immediately provided with direct assistance. The monitoring and evaluation carried out ensures that the implementation of infection prevention and control activities is in accordance with the guidelines. Feedback from the results of monitoring and evaluation is expected to result in improvements through changes in the understanding and behavior of officers in implementing *hand hygiene adherence*.

The results of the study show that academic-based supervision influences hand washing compliance, academic supervision in the form of guidance or teaching, support for nurses in washing hands according to procedures, so as to increase knowledge and compliance (Pratiwi et al., 2020). The research results of Risti & Dewi (2017) explain that supervision needs to be carried out continuously with the ultimate aim of increasing nurses' knowledge and compliance in carrying out hand hygiene. Supervision is part of the directing function in improving the quality of nursing services. Supervision of service quality in the form of compliance with hand hygiene is a concrete form that provides appreciation and forms positive behavior for nurses which makes it an assessment of the ability to develop services in real terms (Nursalam, 2013).

CONCLUSION

The research results showed that the level of hand hygiene adherence of nurses was mostly in the low category. The bivariate analysis shows that there is a relationship between individual factors (knowledge, training), psychological factors (motivation, attitude), organizational factors (availability of infrastructure and supervision) with nurses' adherence with five moments of hand hygiene. The most dominant influencing factors are supervision from IPCN and IPCLN, nurses' attitudes and nurses' knowledge

REFERENCES

Abdella, N. M., Tefera, M. A., Eredie, A. E., Landers, T. F., Malefia, Y. D., & Alene, K. A. (2014). Hand hygiene compliance and associated factors among health care providers in Gondar University Hospital, Gondar, North West Ethiopia. BMC Public Health, 14(1). https://doi.org/10.1186/1471-2458-14-96

Allegranzi, B., Gayet-Ageron, A., Damani, N., Bengaly, L., McLaws, M. L., Moro, M. L., Memish, Z., Urroz, O., Richet, H., Storr, J., Donaldson, L., & Pittet, D. (2013). Global implementation of WHO's multimodal strategy for improvement of hand hygiene: A quasi-experimental study. The Lancet Infectious Diseases, 13(10), 843–851. https://doi.org/10.1016/S1473-3099(13)70163-4

Amalia, R., Widagdo, L., & BM, S. (2016). Faktro-Faktor yang Berhubungan dengan Tingkat Kepatuhan Tenaga Kesehatan Melakukan Cuci Tangan (Studi Kasus Instalasi Rawat Inap Rajawali RSUP Dr. Kariadi Semarang). Jurnal Kesehatan Masyarakat, 4(3), 2356–3346. http://ejournal-s1.undip.ac.id/index.php/jkm

An, B., & Yang, S. J. (2020). The evaluation of a multimodal hand hygiene improvement strategy in Cambodian hospitals. Journal of Infection in Developing Countries, 14(9), 1047–1053. https://doi.org/10.3855/JIDC.13090

Anugrahwati, R., & Hakim, N. (2019). Faktor-Faktor Yang Mempengaruhi Kepatuhan Perawat Dalam Melakukan Hand Hygiene Five Moments Di Rs. Hermina Jatinegara. Jurnal Ilmiah Keperawatan Altruistik, 2(1), 41–48. https://doi.org/10.48079/vol2.iss1.28

Azis, A., & Parwati, T. (2013). Laporan hasil penelitian Cuci tangan sebagai faktor risiko kejadian ventilator associated pneumonia di RSUP Sanglah Denpasar tahun 2012. 120–125.

Damanik, S. M. (2012). Kepatuhan Hand Hygiene Di Rumah Sakit Immanuel Bandung. Students E-Journal, 1(1), 29. http://jurnal.unpad.ac.id/ejournal/article/view/683

Ece, Syahrul, R. R. (2021). Pengaruh PenggunaanAlcohol Based Handrub (ABHR) terhadap Tingkat Kepatuhan Hand Hygiene Petugas Kesehatan: A Systematic Review. 12(April), 192–196. https://doi.org/DOI: http://dx.doi.org/10.33846/sf12219

Fitriany, M. S., Farouk, H. H., & Taqwa, R. (2016). Perilaku Masyarakat dalam Pengelolaan Kesehatan Lingkungan (Studi di Desa Segiguk sebagai Salah Satu Desa Penyangga Kawasan HUtan Suaka Margasatwa Gunung Raya Ogan Komering Ulu Selatan). Jurnal Penelitian Sains, 18(1), 41–46.

Ghorbanmovahhed, S., Shahbazi, S., Gilani, N., Ostadi, A., Shabanloei, R., & Gholizadeh, L. (2023). Effectiveness of implementing of an infection control link nurse program to improve compliance with standard precautions and hand hygiene among nurses: a quasi-experimental study. BMC Medical Education, 23(1), 1–12. https://doi.org/10.1186/s12909-023-04208-1

Gibson, Ivancevich, Donnelly, I. (2015). Organisasi (Agus darma (ed.); kelima). Gelora aksara pratama.

Hapsari, A. P., Wahyuni, C. U., & Mudjianto, D. (2018). Pengetahuan Petugas Surveilans Tentang Identifikasi Healthcare-Associated Infections di Surabaya. Jurnal Berkala Epidemiologi, 6(2), 130. https://doi.org/10.20473/jbe.v6i2.2018.

Harun, M. G. D., Anwar, M. M. U., Sumon, S. A., Mohona, T. M., Hassan, M. Z., Rahman, A., Abdullah, S. A. H. M., Islam, M. S., Oakley, L. P., Malpiedi, P., Kaydos-Daniels, S. C., & Styczynski, A. R. (2023). Hand hygiene compliance and associated factors among healthcare workers in selected tertiary-care hospitals in Bangladesh. Journal of Hospital Infection, 139, 220–227. https://doi.org/10.1016/j.jhin.2023.07.012

Idris, H. (2022). Hand Hygiene Panduan Bagi Petugas kesehatan.

Kemenkes RI. (2017). Peraturan Menteri Kesehatan RI No 27 Tahun 2017 Tentang Pedoman Pencegahan Dan Pengendalian Infeksi Di Fasilitas Pelayanan Kesehatan. In Peraturan Menteri Kesehatan Republik Indonesia Nomor 27 Tahun 2017 T (Issue 857).

Komariah Abdulah, Andi Indahwaty Sidin, S. A. P. (2016). Hubungan Pengetahuan, motivasi, dan Supervisi Dengan Kinerja Pencegahan Dan Pengendalian Infeksi Nasokomial Di RSUD Haji Makasar. 1, 165–175.

Lailawidar. (2022). Health Workers Compliance Towards Infection Prevention and Control in Indonesia. International Journal of Nursing Education, 14(1), 88–98. https://doi.org/10.37506/ijone.v14i1.17756

Mangkunegara, A. P. (2019). Manajemen Sumber Daya Manusia Perusahaan. Remaja Rosdakarya.

Notoatmodjo. (2014). Ilmu Perilaku Kesehatan. Rineka cipta Jakarta.

Nurahmani. (2018). Faktor Yang mempengaruhi Perawat Dalam Melakukan Hand Hygiene Sebelum dan sesudah Melakukan Tindakan Di RS Cut Meutia Langsa.

Nursalam. (2013). Manajemen Keperawatan : Aplikasi dalam Praktek Keperawatan profesional.

Parwa, D., Krisnawati, M. S., & Yanti, E. D. (2019). Hubungan Supervisi dan Motivasi Dengan Kepatuhan Perawat Mencuci Tangan Di RSUD. Jurnal Kepemimpinan Dan Manajemen Keperawatan, 2(1), 28. https://doi.org/10.32584/jkmk.v2i1.281

Pratiwi, I. H., Khotimah, H., & Supriyadi, B. (2020). Supervisi Berbasis Akamedik kepada Petugas Kesehatan dalam Kepatuhan Mencuci Tangan. Coping: Community of Publishing in Nursing, Vol 8 No 1 (2020): April 2020, 17–24. https://ojs.unud.ac.id/index.php/coping/article/view/58978/34603

Risti, R., & Dewi, K. (2017). Faktor Determinan Kepatuhan Perawat Dslsm Melakukan Cuci TangN Di RSUD Ade Muhammad Djoen Sintang. http://openjurnal.unmuhpnk.ac.id/index.php/JKMK?page=index

Rofli, M. (2021). Teori dan Falsafah Keperawatan. Paper Knowledge. Toward a Media History of Documents, 5(2), 40–51.