INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH AND ANALYSIS

ISSN(print): 2643-9840, ISSN(online): 2643-9875

Volume 06 Issue 07 July 2023

DOI: 10.47191/ijmra/v6-i7-37, Impact Factor: 7.022

Page No. 3128-3136

Relationship between Nurse Performance and Implementation of Infection Prevention and Control at Hospital X Bogor, Indonesia

Zhafirah Zhafarina[1], Serri Hutahaean[2]

[1,2]Faculty of health sciences, Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia

Corresponding Author : Serri Hutahaean

ABSTRACT: The hospital is a place for people to get treatment and health services, and expect the best treatment. However, due to the high rate of Healthcare-Associated Infections (HAIs) in hospitals, health workers must be able to take Infection Prevention and Control (PPI) measures; but the workload, work environment, motivation, and attitudes drive the performance of nurses in providing nursing care, which can have an impact on the implementation of PPI. The purpose of this study was to determine the relationship between nurse performance and respondent characteristics with the implementation of infection prevention and control in the inpatient room of Hospital X in Bogor Regency, Indonesia. The method in this study is descriptive-analytic with a cross-sectional approach with a total sampling of 45 respondents. The results of the chi-square test obtained a p-value of 0.001 <0.05, which means that there is a significant relationship between the performance of nurses and the implementation of infection prevention and control. It can be concluded that the better the nurse's performance, the greater the opportunity to be able to carry out infection prevention and control actions properly. Researchers recommend improving the quality of nurses by providing retraining or retraining to nurses to add experience and insight so that it will increase the work ethic that is beneficial for the implementation of infection prevention and control properly organized by hospital management.

KEYWORDS: Infection, Performance, Prevention and Control, Nurse.

I. INTRODUCTION

Healthcare-Associated Infections (HAIs) is a disease acquired while in a hospital that develops as a result of treatment or hospital visits, and can occur in people receiving health services, health workers, and hospital visitors (Purba et al., 2021). Healthcare-Associated Infections (HAIs) are an occasional consequence of hospitalization and one of the top ten causes of death in the United States, according to a study from the Agency for Healthcare Research and Quality, 5% to 15% of hospitalized patients in high-income countries are found to be exposed to Healthcare. Associated Infections (HAIs) (Haque et al, 2018).

The Centers for Disease Control (CDC) stated that out of 50 countries, treatment rooms (45%), NICU rooms (8%), and intensive care units (ICU) (41%) had the highest rates of health-related infection services (HAIs). With a range of 4.8 to 15.5%, the incidence of health-related infections (HAIs) in Indonesia is 15.75% greater than in industrialized countries (Asnawati et al, 2022). The percentage of ongoing Healthcare-Associated Infections (HAIs) in West Java Province is 2.2% (Aliyupuiudin, 2019). In 2010 Healthcare-Associated Infections (HAIs) were reported in ten public education institutions with an incidence of 6%-16%, with an average of 9.8%. (Ministry of Health, 2017).

Infection is a persistent problem that can push patients to hospital inpatient units. Hospitals must develop a complete program to handle infection cases because they have various complexities of problems, one of which is the Infection Prevention and Control (IPC) program. Essential Infection Prevention and Control (PPI) is carried out in inpatient units because it can reduce the number of HAIs that are carried out by means of isolation precautions, education, and training, employee health, supervision of antibiotic use, and infection surveillance (Ministry of Health, 2017).

The role of the nurse is a determinant in the successful implementation of Infection Prevention and Control (IPC) (Hutahaean & Handiyani, 2018). Improving the quality of patient safety related to infection is driven by the performance of nurses, especially the role of Infection Prevention and Control (IPC) care (Asmara et al, 2019). Infection Prevention and Control Actions (IPC) have a significant effect on nurse performance when providing nursing care to patients such as assessment, diagnosis, intervention, implementation, evaluation, and documentation (Adhiwijaya, Sjattar, & Natsir, 2019).

However, there are some obstacles experienced by nurses in the implementation of Infection Prevention and Control (IPC) including scarcity of facilities and infrastructure, lack of knowledge of nurses, and tracking and data collection of infection cases that are not sustainable (Adhiwijaya, Sjattar, & Natsir, 2019). Therefore, the ongoing obstacles must be handled wisely because the impact that will take place is an increase in the transmission rate of Healthcare-Associated Infections (HAIs) to health workers. Based on this background, the researchers conducted an exploration related to "The Relationship between Nurse Performance and the Implementation of Infection Prevention and Control in the Inpatient Room of Hospital X in Bogor Regency, Indonesia".

II. METHOD

This research is a descriptive quantitative analytic study with a cross-sectional approach, namely data for both dependent and independent variables and the factors that encourage it are collected at the same time (Suharmanto, 2021). The population of this study was nurses working in the Inpatient Room of X Hospital with a sampling technique using non-probability sampling and a total sample of 45 nurses. The inclusion criteria are as follows: 1) The nurse implementing the inpatient room of Hospital X; 2) Implementing nurses who work ≤ 5 years and > 5 years; 3) Willing to be involved in research. While the exclusion criteria are as follows: 1) Nurses who are on leave; 2) Nurses in the High Care Unit (HCU) room; and 3) Nurses who are in the Covid-19 inpatient room.

This research was conducted from March to June 2023. Research ethics was carried out by interviewing the hospital with researchers regarding the research being carried out, as well as ethics for a sample of nurses at X Hospital and an ethical letter issued by KEP-K UPNVJ with letter number 148/V /2023/KEPK. The ethical principles that researchers use include respecting human dignity (respect for persons), doing good (beneficence) and not harming (non-maleficence), and justice.

The data in this study were taken using questionnaires consisting of questionnaires A, B, and C. Questionnaire A collected information such as name, age, gender, education, length of service, and participation of respondents in IPC training. Questionnaire B is a questionnaire (Nursalam, 2020) that has been modified by researchers. The questionnaire includes 25 statements of behavior, professionalism, and the nursing process. Nurse performance assessment is said to be good if ≥ median value, said to be poor if < median value with median: 115.00. Meanwhile, questionnaire C is a questionnaire (Hutahaean, Handiyani, & Gayatri, 2018) and has been modified by previous researchers from previous research findings (Yulistyani, 2022). This questionnaire uses the Likert Scale rating system, which is a scale used to measure a phenomenon such as assumptions, attitudes, groups of people, or individual perceptions (Sugiyono, 2018).

The instrument validity test in this study was conducted on 30 inpatient nurses at the Family Medical Center Hospital. Validity Test on Nurse Performance Instruments with 25 items obtained valid results with a range of Pearson Correlation values (0.417-0.758). Test the validity of the IPC Implementation instrument with as many as 14 valid items with a range of Pearson Correlation values (0.375-0.747), while there is 1 item that shows the value of r count (0.257) < r table (0.361) with that 1 item being declared invalid. The reliability test on the Nurse Performance instrument in this study used Cronbach's alpha to obtain a value of $\alpha = 0.933$, which means that the Nurse Performance instrument has a very reliable level of reliability. The reliability test on the Infection Prevention and Control Implementation instrument obtained a value of $\alpha = 0.796$, which means that this instrument has reliable reliability. Data analysis in this study used univariate and bivariate analysis. Univariate analysis of the sample data can reveal a larger proportion of the population using tables of frequency and proportion distributions. While bivariate analysis was carried out to test the dependent and independent research variables using the Chi-Square test.

III. RESULTS

The frequency distribution in this study was obtained from data on respondent characteristics based on age, gender, education level, length of work, infection prevention and control (IPC) training, nurse performance, and implementation of infection prevention and control (IPC).

Table 1. Characteristics of Respondents Based on Age, Gender, Education Level, Length of Work, and Infection Prevention and Control (IPC) Training, 2013 (n=45)

Characteristics	Category	Frequency (N)	Percentage (%)
Age	> 30 Years	8	17.8%
	≤ 30 Years	37	82.2%
	Total	45	100%
Gender	Male	5	11.1%
	Female	40	88.9%

	Total	45	100%
Level of education	Diploma	28	62.2%
	Bachelor	17	37.8%
	Total	45	100%
Length of work	> 5 Years	11	24.4%
	≤ 5 Years	34	75.6%
	Total	45	100%
IPC training	Ever	25	55.6%
	Never	20	44.4%
	Total	45	100%

Table 1 shows that the majority of nurses in the inpatient room of Hospital X are aged ≤ 30 years as many as 37 respondents (82.2%) and most of the nurses are female as many as 40 respondents (88.9%). The highest level of education was found in Diploma graduates with 28 respondents (62.2%) with work experience >5 years for 11 respondents (24.4%) and <5 years for 34 respondents (75.6%). As many as 25 respondents (55.6%) had attended IPC training which was held at Hospital X in Bogor Regency, while 20 respondents (44.4%) had never attended IPC training.

Table 2. Characteristics of Respondents Based on Nurse Performance at X Hospital, 2013 (n=45)

Characteristics	Category	Frequency (N)	Percentage (%)
Nurse Performance	Good	23	51.1%
	Not Good	22	48.9%
	Total	**45**	**100%**

Table 2 shows that the majority of nurses have good performance, namely 51.1%. while as many as 48.9% of nurses have poor performance.

Table 3. Characteristics of Respondents Based on Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

Characteristics	Category	Frequency (N)	Percentage (%)
Implementation of Infection Prevention and Control	Good	18	40%
	Not Good	27	60%
	Total	**45**	**100%**

Table 3 shows that the majority of nurses were unable to properly implement infection prevention and control, namely 27 respondents (60%). Meanwhile, 18 respondents (40%) were able to properly implement infection prevention and control.
Bivariate analysis in this study used the Chi-Square test to determine the relationship between age, gender, education level, length of work, infection prevention and control training (IPC), and nurse performance with the implementation of infection prevention and control in the inpatient room of X Hospital in Bogor Regency

Table 4. Analysis of Nurse Age Relationship with Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

Age	**Implementation of Infection Prevention and Control**				**Total**		**OR (95% CI)**	***p-value***
	Good		**Not Good**					
	N	**%**	**N**	**%**	**N**	**%**		
> 30 Tahun	3	37.5	5	62.5	8	100	0.880	
≤ 30 Tahun	15	40.5	22	59.5	37	100	(0.182-	0.874
Total	18	40	27	60	45	100	4.250)	

Table 4 shows that as many as 62.5% implement infection prevention and control poorly among those aged > 30 years. The results of the Chi-Square statistical test showed a p-value of 0.874 which means that there was no significant relationship between the age of the nurse and IPC implementation in the inpatient room of X Hospital in Bogor Regency.

Table 5. Analysis of the Relationship between Gender and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

Gender	Implementation of Infection Prevention and Control				Total		OR (95% CI)	*p-value*
	Good		Not Good					
	N	%	N	%	N	%		
Male	2	40	3	60	5	100	1.000 (0.150-6.671)	1.000
Female	16	40	24	60	40	100		
Total	18	40	27	60	45	100		

Table 5 shows that 60% of female respondents implemented IPC poorly. The Chi-Square statistical test yielded a p-value of 1,000, which indicated that there was no relationship between gender and IPC implementation in the inpatient room of X Hospital in Bogor Regency.

Table 6. Analysis of the Relationship between Education Level and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

Level of education	Implementation of Infection Prevention and Control				Total		OR (95% CI)	*p-value*
	Good		Not Good					
	N	%	N	%	N	%		
Diploma	13	46.4	15	53.6	28	100	2.080 (0.578-7.486)	0.259
Bachelor	5	29.4	12	70.6	17	100		
Total	18	40	27	60	45	100		

Table 6 shows that as many as 70.6% with an undergraduate/Ners level of education implement IPC poorly. The results of the Chi-Square analysis showed a p-value of 0.259 which means that there was no relationship between education level and the implementation of infection prevention and control in the inpatient room of Hospital X in Bogor Regency.

Table 7. Analysis of Relationship between Length of Work and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

	Implementation of Infection Prevention and Control				Total		OR (95% CI)	*p-value*
	Good		Not Good					
Length of work	N	%	N	%	N	%		
> 5 Years	3	27.3	8	72.7	11	100	0.475 (0.107-2.107)	0.322
≤ 5 Years	15	44.1	19	55.9	34	100		
Total	18	40	27	60	45	100		

Table 7 shows that as many as 72.7% with work duration > 5 years cannot implement IPC properly. The results of the Chi-Square analysis showed a p-value of 0.322 which means that there was no significant relationship between the length of work of nurses and the implementation of IPC in the inpatient room of Hospital X in Bogor Regency.

Table 8. Analysis of the Relationship between Infection Prevention and Control Training (IPC) and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

IPC Training	Implementation of Infection Prevention and Control				Total		OR (95% CI)	*p-value*
	Good		Not Good					
	N	%	N	%	N	%		
Ever	13	52	12	48	25	100	3.250 (0.903-11.696)	0.066
Never	5	25	15	75	20	100		
Total	18	40	27	60	45	100		

Table 8 shows that the majority of nurses who have never attended IPC training cannot implement IPC properly, as many as 75%. The results of the Chi-Square statistical test showed a p-value of 0.066 which means that there was no significant relationship

between Infection Prevention and Control (IPC) training and the implementation of IPC in the inpatient room of Hospital X in Bogor Regency.

Table 9. Analysis of the Relationship between Nurse Performance and Implementation of Infection Prevention and Control at Hospital X, 2013 (n=45)

Nurse Performance	Implementation of Infection Prevention and Control				Total		OR (95% CI)	*p-value*
	Good		Not Good					
	N	%	N	%	N	%		
Good	15	65.2	8	34.8	23	100	11.875 (2.677-52.670)	0.001
Not Good	3	13.6	19	86.4	22	100		
Total	18	40	27	60	45	100		

Table 9 shows that as much as 86.4% with poor performance also implemented IPC poorly. The results of the Chi-Square analysis showed a p-value of 0.001 which means that there was a significant relationship between nurse performance and IPC implementation in the inpatient room of X Hospital in Bogor Regency. From the results of the analysis, OR = 11,875 (95% CI = 2,677-52,670) was also obtained. Because the value of OR> 1, it can be seen that nurses with good performance have an 11.8 times greater chance of implementing IPC properly than nurses with poor performance.

IV. DISCUSSION

Based on the characteristics of the respondents related to age, it was found that the majority of nurses were aged ≤ 30 years. This is in accordance with the findings of Hutahaean, Handiyani & Gayatri (2018) where the majority of nurses are between 26 to 30 years old which is of productive age. The findings of this study are also supported by the findings of Kristianingsih, Arofiati & Widakdo (2022), namely the majority of nurses are <30 years old (67.0%), this study reveals that this age is also a productive age, where as one gets older, a person becomes more able to make decisions, think wisely, control emotions, and be tolerant of the views of others. In Ibrahim & Rahmi's research (2021) most of the age of the nurses is aged 21-30 years (69.7%) this is because they have enthusiasm, agility, and are found to think critically to carry out their duties as nurses while in the productive age range.

This study shows that there is no relationship between age and IPC implementation in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.874 (p>0.05). This is in line with research conducted by Alemania, Djafri & Pabuti (2018) which found no relationship between the age of the respondent and the implementation of infection prevention and control with a p-value of 0.648. Research by Powell-Jackson et al (2020) also says that there is no difference in certain age groups in the performance of nurses in implementing IPC between good and poor. Nurses who are younger (<30 years old) are able to apply IPC well compared to nurses aged >30 years due to stronger motivation, physical and spirit. In addition, nurses with a younger age have a high spirit of idealism and have a sense of wanting to fulfill higher responsibilities than nurses with old age.

The majority of the gender of the nurses in this study were female (60%). This is supported by research by Alemania et al (2018) that the majority of the research respondents were women (85.71%). This is in accordance with the findings of Asmara et al (2019), namely the majority of nurses are female with a total of 68.8%. Women are considered more able to comply with the authority and regulations that apply than men. However, it turns out that women also have a tendency to take more days off from work/leave than men because of the nature of women to get pregnant and give birth.

The results of the analysis show that there is no significant relationship between gender and IPC implementation as evidenced by a p-value of 1,000. The same thing was found in Alemania, Djafri & Pabuti's research (2018) that found no relationship between gender and IPC implementation. In research by Puspita, Oktariani & Rizqiea (2020) it was also found that there was no consistent relationship between male and female gender in problem-solving, motivation, analysis findings, social and communication skills, learning acquisitions, and competitive drive.

A high level of education affects the level of knowledge of nurses. This can be interpreted that the higher the level of education, the higher the knowledge and competence carried out by nurses on the performance carried out by Arifianto, Aini & Kustriyani (2019). However, the findings of this study showed that there was no relationship between education level and the implementation of IPC in the inpatient rooms of X Hospital as evidenced by the p-value of 0.259. The same thing was found in the research of Alemania, Djafri & Pabuti (2018) which explained that there was no significant difference between the level of education and the implementation of IPC with a p-value of 0.102.

The findings of this study also showed that among the 45 people studied, 46.4% of nurses with Diploma education levels could implement infection prevention and control well. According to Daryati, Subekti & Ekacahyaningtyas (2020), the majority of nurses in the study were Diploma nurses, namely 52.1%. Diploma nurses first experience a process of adaptation to the world of work in hospitals compared to Bachelor/Ners. Meanwhile, Handayani, Suarjana & Listyowati (2019) stated that nurses with a bachelor's degree in nursing had a 0.33 times greater chance of complying with hand washing than nurses with a Diploma degree in nursing. Nurses with a higher degree of nursing have a higher probability of thinking so that in carrying out nursing actions, nurses with higher education will better implement IPC in hospitals (Handayani, Suarjana & Listyowati, 2019).

Based on the characteristics of the respondents related to the length of work, it was found that the majority had a length of service of <5 years. This research is in line with research conducted by Heriyati, Hatisah & Astuti (2020) which shows the results that nurses with 1-5 years of service are 60.6% more than nurses with 6-10 years of service with a total of 39.4 %. The results of the analysis also showed that there was no relationship between the length of work and the implementation of IPC infections in inpatient rooms at Hospital X in Bogor Regency with a p-value of 0.322. The results of research conducted by Handayani, Suarjana & Listyowati (2019) also stated that there was no correlation between length of service and hand washing compliance as a form of implementing infection prevention and control with a p-value of 0.139.

The same thing was found in research conducted by Alemania, Djafri & Pabuti (2018) that found no significant difference between the average length of work and the implementation of good and bad IPC as evidenced by a p-value of 0.256. However, a different thing was found in Shanty, Uktutias & Muhadi's research (2020) that there was a relationship between the length of work and adherence to infection prevention and control as evidenced by a p-value of 0.023. The majority of nurses in the study had a length of service of >10 years as many as 18 nurses. Of the 18 nurses with >10 years of service, as many as 100% of nurses had good hand hygiene compliance. The IPC actions carried out were installing infusions, changing bandages, handling post-operative medical waste, and injecting.

The findings of this study indicate that the majority of nurses have attended IPC training (55.6%). This is in accordance with Haryanto's findings (2022) that as many as 84% of respondents had participated in IPC training. The results of the research are in line with the research of Alemania, Djafri & Pabuti (2018) which states that 87.5% of nurses in the Inpatient Surgery Room of Dr M. Djamil Hospital Padang have received IPC training. The results of the analysis of this study also showed that there was no relationship between IPC training and the implementation of infection prevention and control in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.066.

The same thing was also found in research conducted by Alemania, Djafri & Pabuti (2018) that found no relationship between training and the application of IPC with a value of p = 0.674. The study did not provide detailed questions regarding the level of training and the number of IPC trainings attended by nurses. So this resulted in no correlation between IPC training and the implementation of infection prevention and control. Different things were found in research conducted by Nurrahmani, Asriwati & Hadi (2019) that found a relationship between knowledge and compliance with hand hygiene at Cut Meutia Langsa Hospital in Aceh. It turns out that nurses at the hospital routinely receive IPC training every year so that nurses can have good knowledge of how to apply IPC in accordance with applicable SOPs.

Nurse performance is the result of all work activities in a job function carried out in a certain period and is a combination of ability and effort to produce what is done. Nurse performance is an activity of nurses in carrying out their duties, authority and responsibilities as well as possible in achieving the main tasks of the profession and realizing goals in the organization (Adhy Purnawan et al, 2021). The results of the analysis regarding the performance of nurses found that the majority of nurses were able to implement IPC well.

This is in line with the research of Adhy Purnawan et al (2021) that most nurses have good performance, namely 82.5%. A different thing was found in Agustin et al's research (2022) where in this study the majority of respondents had a poor performance of 53.7%. A study by Adhy Purnawan et al (2021) explained that nurses who have good performance will do good prevention and control of nosocomial infections, where this performance greatly influences the prevention and control of nosocomial infections.

The results of the analysis also show that most of the nurses have implemented IPC well. This research is in line with research by Puspita, Oktariani & Rizqiea (2020) that the majority of respondents had good nosocomial infection prevention measures 65.8%. The findings of this study are also supported by the findings of Haryanto (2022), namely that overall nurses have a high Healthcare-Associated Infections behavior of 93.3%. One of the factors that nurses at Hospital X in Bogor Regency implement IPC is due to routine control and monitoring and supervision related to IPC to nurses in inpatient rooms carried out by the head nurse of IPCN.

This study shows that there is a significant relationship between nurse performance and IPC in inpatient rooms at Hospital X in Bogor Regency as evidenced by a p-value of 0.001. The Odds Ratio value in the statistical test results is 11.875 (2.677-5.670) which

means that nurses with good nurse performance have 11.8 times greater chances of implementing IPC properly. The results of this study are in line with research by Adhy Purnawan et al (2021) that there is a significant relationship between nurse performance and prevention of nosocomial infections at RSIA Vitalaya as evidenced by a p-value of 0.008 and an odds ratio of 9.2 (1.4-58, 4) which means that nurses with good performance will be able to implement IPC properly by 9.2 times higher than nurses with poor performance.

Alfariki's research (2019) states that there is a relationship between nurse behavior and the implementation of infection prevention and control programs at the Kendari City Hospital. The results of this study explained that 18 respondents who rated the implementation of the IPC program well were (77.8%) better able to carry out nosocomial infection prevention and control. Meanwhile, 37 nurse respondents who assessed that the implementation of IPC was not good enough (70.3%) to prevent and control nosocomial infections.

The performance of nurses in the inpatient room of Hospital X in Bogor Regency is quite good, where 23 out of 45 nurses are able to have good performance. This is also supported by sufficient abilities and skills, perception, high motivation, and supervision. The results of this study are in line with research conducted by (Adhy Purnawan et al (2021) which states that nurses at RSIA Vitalaya South Tangerang improve nurse performance by increasing enthusiasm, responsibility, discipline, and actions are carried out in accordance with Standard Operating Procedures (SOP) which In addition, in order to fulfill organizational goals, nurses have the motivation and desire to do their best, as seen from their performance in the hospital.

However, there were some nurses who performed less well in this study. There were 22 out of 45 nurses who had poor performance. Nurses who have poor performance in the end are also less able to implement infection prevention and control properly. This is evidenced that 19 out of 22 nurses who had poor performance implemented infection prevention and control poorly as well. This means that the performance of nurses who are not good will increase the risk of these nurses to implement infection prevention and control poorly too.

In line with the opinion expressed by Abdullah, Andi & Pasinringi (2016) that there are still nurses who have poor performance in implementing nosocomial infection prevention in their research. This can happen because the nurse does not apply the knowledge she has in carrying out nursing actions including the prevention of nosocomial infections in the hospital. Research by Asmara et al (2019) states that the performance of nurses in implementing infection prevention and control is considered not optimal. This is caused by the implementation of infection prevention and control which is not placed as a priority in patient care measures.

The non-optimal performance of nurses in implementing IPC has resulted in the failure of the IPC program in hospitals. Many factors can affect the performance of nurses in implementing IPC in hospitals. According to Sastrohadiwiryo (2003) there are 5 factors that drive nurse performance, including skills, motivation, support received, job availability, and employee relations with the organization. Research by N. Qasem & Hweidi (2017) states that the lack of motivation of nurses in implementing IPC will lead to ineffectiveness in the performance of nurses in implementing PPI. The performance of nurses in implementing IPC is still in the poor category of 50% and this shows that the involvement of nurses in implementing the IPC program is still lacking (Asmara et al, 2019). This ultimately encourages an increase in the incidence of HAIs. Where HAIs often occur in developing countries (Ayed et al, 2019).

Research by Adhy Purnawan et al (2022) explains that to reduce the incidence of nosocomial infections, it is necessary to make comprehensive and maximum efforts to prevent nosocomial infections in every unit that is at risk for transmitting nosocomial infections. Research by Asmara et al (2019) explains that there are factors that are most related to the performance of nurses in implementing PPI. A good reward has a good opportunity to improve nurse performance. This is proven in the research of Asmara et al (2019) which states that rewards have an opportunity of 27.5 times to improve nurse performance in implementing PPI.

Nurse performance is closely related to knowledge, attitudes and skills. Improving the performance of nurses in the implementation of PPI, of course, must get management support in the form of evaluation through supervision. But unfortunately, reviews of nurse performance evaluations in hospital infection programs are still limited (Asmara et al, 2019). So that it ultimately affects the implementation of IPC in hospitals. Good nurse performance will increase the opportunity to be able to implement IPC properly. Conversely, if the nurse's performance is not good, it will increase the risk of implementing IPC poorly. This is of course supported by experience, knowledge and skills, level of education and knowledge, enthusiasm and motivation, as well as supervision by the head of the room to increase hospital nurse compliance with PPI.

V. CONCLUSIONS

The description of the characteristics of nurses is dominated by age ≤ 30 years as much as 82.2%. The majority of nurses, 88.9%, were women. More nurses had a Diploma education than Bachelor, as much as 62.2%. The majority of nurses 75.6% have worked

for ≤ 5 years, and as many as 55.6% of nurses have attended IPC training. At Hospital X in Bogor Regency, 51.1% of nurses had a good performance, and 60% of nurses had a poor implementation of infection prevention and control.

There was no significant relationship between the characteristics of the respondents and the implementation of IPC in this study due to the occurrence of several other factors, however, a significant relationship was found between the performance of nurses and the implementation of IPC in line with previous studies which said that there were still nurses who had poor performance in implementing prevention. nosocomial infection in his research. This can happen because the nurse does not apply the knowledge she has in implementing nursing actions including the prevention of nosocomial infections in the hospital.

Researchers recommend improving the quality of nurses by providing retraining or retraining for nurses to add experience and insight so that it will increase the work ethic that is beneficial for the implementation of infection prevention and control which is well organized by hospital management.

REFERENCES

1) Abdulah, K., Andi, I. S., & Pasinringi, S. A. (2016). Hubungan Pengetahuan, motivasi, dan Supervisi Dengan Kinerja Pencegahan Dan Pengendalian Infeksi Nasokomial Di RSUD Haji Makasar. *Hasanuddin University Repository*, *1*, 165–175.
2) Adhiwijaya, A., Sjattar, E. L., & Natsir, R. (2017). Eksplorasi Kendala Tim PPI Dalam Pelaksanaan Pencegahan Dan Pengendalian Infeksi Di Rsud Labuang Baji Makassar. *Jurnal Ilmiah Kesehatan Diagnosis*.
3) Adhy Purnawan, Kasumawati, F., Andriati, R., & Putra, G. H. (2021). Faktor-faktor yang berhubungan dengan kinerja perawat dalam melaksanakan pencegahan infeksi nosokomial di ruang rawat inap rsia vitalaya kota tangerang selatan. *MAP Midwifery and Public Health Journal*, *1*(1), 14–36.
4) Agustin, I., Muliyadi, M., & Maulida, M. N. (2022). Analisis sistem penghargaan dan beban kerja terhadap kinerja perawat pelaksana rumah sakit pada masa pandemi covid -19. *Jurnal Keperawatan Silampari*, *5*(2), 1249–1258. https://doi.org/10.31539/jks.v5i2.3289
5) Alemania, R., Djafri, D., & Pabuti, A. (2018). Hubungan Peran Manajer dengan Pelaksanaan Pencegahan dan Pengendalian Infeksi Rumah Sakit di Ruang Rawat Inap Bedah RSUP Dr.M.Djamil Padang Tahun 2016. *Jurnal Kesehatan Andalas*, *7*(1), 65. https://doi.org/10.25077/jka.v7i1.781
6) Alfariki, L. ode. (2019). Hubungan pelaksanaan program pencegahan dan pengendalian infeksi terhadap perilaku perawat dalam pencegahan dan pengendalian infeksi nosokomial ruang rawat inap rsud kota kendari. *Malahayati Nursing Journal*, *1*(2), 148–159.
7) Aliyupiudin, Y. (2019). Hubungan Pengetahuan Perawat Tentang Infeksi Nosokomial Terhadap Perilaku Pencegehan Infeksi Nososkomial Di Ruang Bedah Rs Salak Kota Bogor. *Jurnal Ilmiah Wijaya*, *11*(1), 1–10.
8) Arifianto, Aini, D. N., & Kustriyani, M. (2019). Gambaran perawat dalam pencegahan infeksi nosokomial di rsud dr h soewondo kendal. *Prosiding Seminar Nasional Widya Husada*, 39–56.
9) Asmara, A., Hariyati, R. T. S., Handiyani, H., & Avia, I. (2019). Analysis of Infection Prevention Control Nurse performance: A descriptive study. *Enfermeria Clinica*, *29*, 36–40. https://doi.org/10.1016/j.enfcli.2019.04.006
10) Asnawati, R., Syukur, S. B., Yunus, H., Abas, F. F., Tabrani, S., & Yahya, M. (2022). Pengendalian Infeksi Di Ruangan Interna Rsud Aloei Saboe Kota Gorontalo. *Jurnal Pengabdian Kepada Masyarakat*, *1*.
11) Ayed, H. Ben, Yaich, S., Trigui, M., Jemaa, M. Ben, Hmida, M. Ben, Karray, R., Kassis, M., Mejdoub, Y., Feki, H., Jedidi, J., & Damak, J. (2019). Prevalence and risk factors of health care–associated infections in a limited resources country: a cross-sectional study. *American Journal of Infection Control*, *47*(8), 945–950. https://doi.org/10.1016/j.ajic.2019.01.008
12) Daryati, S., Subekti, I. W., & Ekacahyaningtyas, M. (2020). Hubungan supervisi infection prevention control nurse (ipcn) dengan kepatuhan perawat dalam menerapkan standar prosedur operasional (spo) universal precaution di rsud dr. soediran mangun sumarso kabupaten wonogiri. *Kusuma Husada Surakarta*, *14*.
13) Handayani, N. L. P., Suarjana, I. K., & Listyowati, R. (2019). Hubungan karakteristik, pengetahuan dan motivasi perawat dengan kepatuhan cuci tangan di ruang rawat inap rsu surya husadha denpasar. *Archive of Community Health*, *6*(1), 9. https://doi.org/10.24843/ach.2019.v06.i01.p02
14) Haque, M., Sartelli, M., Mckimm, J., & Abu Bakar, M. (2018). Infection and Drug Resistance Dovepress Health care-associated infections-an overview. *Infection and Drug Resistance*, *11*(1), 2321–2333.
15) Haryanto, M. S. (2022). Hubungan pengetahuan perawat dengan perilaku pencegahan healthcare associated infections (hais) di gedung fresia rumah sakit umum pusat dr. hasan sadikin bandung 2022. *Jurnal Nursing Update*, *3*(4).
16) Heriyati, Hatisah, & Astuti, A. (2020). Pencegahan Dan Pengendalian Infeksi Nosokomial Di Rumah Sakit. *Jurnal Pendidikan Kesehatan*, *9*(1), 87. https://doi.org/10.31290/jpk.v9i1.1465

17) Hutahaean, S., & Handiyani, H. (2018). Pengembangan Fungsi Dan Peran Kepala Ruangan Dalam Pencegahan Dan Pengendalian Infeksi Di Rumah Sakit X. *Jurnal Akademi Keperawatan Husada Karya Jaya*, *4*, 53–64.
18) Hutahaean, S., Handiyani, H., & Gayatri, D. (2018). Pelaksanaan Pencegahan dan Pengendalian Infeksi Melalui Penguatan Peran dan Fungsi Kepala Ruang di Rumah Sakit. *Jurnal Akademi Keperawatan Husada Karya Jaya*, *4*(1), 41–52.
19) Ibrahim, N., & Rahmi, N. (2021). Karakteristik perawat pelaksana terhadap kewaspadaan standar dirumah sakit umum dr. zubir mahmud aceh timur. *PREPOTIF : Jurnal Kesehatan Masyarakat*, *5*(2), 703–707. https://doi.org/10.31004/prepotif.v5i2.1829
20) Kemenkes. (2017). *Peraturan Menteri Kesehatan Republik Indonesia Nomor 27 Tahun 2017 Tentang Pedoman Pencegahan Dan Pengendalian Infeksi Di Fasilitas Pelayanan Kesehatan* (pp. 1–14). Kemenkes RI.
21) Kristianingsih, Arofiati, F., & Widakdo, G. (2022). Karakteristik perawat pelaksana terhadap perilaku caring. *Jurnal Keperawatan Silampari*, *633*.
22) N. Qasem, M., & Hweidi, I. M. (2017). Jordanian nurses' knowledge of preventing surgical site infections in acute care settings. *Open Journal of Nursing*, *07*(05), 561–582. https://doi.org/10.4236/ojn.2017.75043
23) Nurrahmani, Asriwati, & Hadi, A. J. (2019). Kepatuhan Perawat Dalam Melakukan Hand Hygiene Sebelum Dan Sesudah Melakukan Tindakan Di Ruang Inap Rumah Sakit Cut Meutia Langsa Aceh. *PROMOTIF: Jurnal Kesehatan Masyarakat*, *9*(1), 85–92. https://jurnal.unismuhpalu.ac.id/index.php/PJKM/article/view/585
24) Nursalam. (2020). *Metodologi Penelitian Ilmu Keperawatan Pendekatan Praktis* (P. P. Lestari (ed.); 5th ed.). Salemba Medika.
25) Powell-Jackson, T., King, J. J. C., Makungu, C., Spieker, N., Woodd, S., Risha, P., & Goodman, C. (2020). Infection prevention and control compliance in tanzanian outpatient facilities: a cross-sectional study with implications for the control of covid-19. *The Lancet Global Health*, *8*(6), e780–e789. https://doi.org/10.1016/S2214-109X(20)30222-9
26) Purba, D. H., Simamora, J. P., Syafruddin, A., Mubarak, Sinaga, L. R. V., Purba, I. G., & Kushargina, R. (2021). *Pencegahan Dan Pengendalian Infeksi (PPI)* (J. Simarmata (ed.); 1st ed.). Yayasan Kita Menulis.
27) Puspita, E. H., Oktariani, M., & Rizqiea, N. S. (2020). Hubungan Beban Kerja Perawat Dengan Pencegahan Infeksi Nosokomial Di Ruang Rawat Inap Rsud Simo Boyolali. *Naskah Publikasi*, *63*, 1–15.
28) Shanty, I. P. W., Uktutias, S. A. M., & Muhadi. (2020). Hubungan Karakteristik Perawat dan Self-Efficacy Terhadap Kepatuhan Hand Hygiene Perawat Rawat Inap di Rumah Sakit Jiwa Menur. *Indonesian Journal of Hospital Administration*, *3*(2), 61–67. http://ejournal.almaata.ac.id/index.php/IJHAA
29) Sugiyono. (2018). *Metode Penelitian Metode Penelitian Kuantitatif, Kualitatif*. Alfabeta.
30) Suharmanto. (2021). *Metodologi Penelitian Kesehatan* (1st ed.). Pustaka Panasea.
31) Yulistyani, R. E. (2022). *Hubungan Selft Efficacy Terhadap Tindakan Pencegahan dan Pengendalian Infeksi di Rawat Inap RSUD Kabupaten Bekasi*. Universitas Pembangunan Nasional Veteran Jakarta.

There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0) (https://creativecommons.org/licenses/by-nc/4.0/), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.