

# Factors Analysis Related towards Behavior of Nosocomial Infection Control on Family Waiting Patient

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**Abstract:** World Health Organization (WHO) predicted 1.4 million people infected Health Associated Infection (HAIs). One of the risk factors caused is behavior of nosocomial infection control on patient watcher. The purpose is to know relation behavior of nosocomial infection control on patient watcher patient in Semarang hospital and the number of participants was 61 people. Research method was observation with cross sectional approach. Sampling technique was purposive sampling. Data analysis used univariate and bivariate analysis with Pearson correlation test and chi-square test. Result showed a half of them, mean age of the participants was 45.56. Minimum-maximum values were 20-62 with standard deviation 11.114, gender in the research, most of them was female (83.6%), last education was junior high school (34.4%), most of them worked as maids (45.9%). Category of behavior of nosocomial infection control: less (44.3%), moderate (34.4%), and good (21.3%). There is a meaningful relation between behavior of nosocomial infection control behavior with age ( $p = 0.000$ ), education ( $p = 0.000$ ), and occupation ( $p = 0.000$ ). There is no meaningful relation between behavior of nosocomial infection control with gender ( $p = 0.186$ ). Conclusion: there is a meaningful relation between behavior of nosocomial infection control on patient watcher with age, education, and job, while gender does not have a meaningful relation with behavior of nosocomial infection control. Based on this research, it is recommended to be done as intervention which is able to increase behavior of nosocomial infection control on patient watcher by improving nursing service.

**Key words:** Infection control behavior, family waiting patient, nosocomial infection.

## 1. Introduction

Healthcare Associated Infections (HAIs) or nosocomial infections are infections that occur in patients during hospital care or health facilities not found and not included in the incubation period when the patient is admitted to the hospital. The effects of HAIs vary greatly, ranging from prolonged discomfort to death [1, 2].

The World Health Organization (WHO) estimates that over a period of time, more than 1.4 million people worldwide were affected by HAIs [3]. Most nosocomial infections occur in poor and developing countries. A study conducted by the WHO of 14 countries from Europe, the Middle East, Southeast Asia, and the Pacific indicated a nosocomial infection with the highest incidence in Southeast Asia of 10.0%.

[4, 5].

The nurse belongs to a component of the chain of transmission of infection and may enter in vulnerable host and place the growth of infecting agent. In this case, nurses with poor endurance conditions will be used, so personal protective equipment must be used when performing operations on patients. The impact of not using personal protective equipment such as gloves and contacts at work can cause nosocomial infections [6, 7].

In addition to the patient's nurse, a patient will often be in contact with the patient in the hospital environment. Based on the observation mentioned above, a patient who is getting treatment at the hospital will be cared for by their families. Some patient waiting behaviors while waiting and nursing are both the source and cause of nosocomial infection. [8]

As for other behaviors that are at risk of becoming a

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source or cause of nosocomial infections are: visiting the hospital rollicking, sitting and sleeping in a patient's bed and even sleeping under the patient's bed using a mat as a base, carrying a child under 12 when visiting the hospital, using the same cutlery and bath as the patient, and staying in the hospital and talking to the patient while coughing and flu, littering indiscriminately, bringing in food or drink from outside to the patient, and lack of awareness about the importance of washing hands.

Infection control efforts are needed from the hospital for patient care. Seeing the impact of nosocomial infections is very complex that inhibits the process of healing and recovery of patients, can even lead to increased morbidity, and mortality. Nosocomial infections also cause length of stay (LOS) to increase 5-10 days, so the cost increases and eventually leads to the result that the quality of services in health care institutions will decline. The patient's mortality rate was 6% higher than that of non-nosocomial infection. Not only can the patient be infected, all hospital personnel associated with the patient, such as the attendant and the patient's visitors [9].

Factors that affect the occurrence of nosocomial infections include external factors (extrinsic factor) which are medical officers, medical equipment, environment, other patients and patient waiting. Patient's waiter behavior was influenced by age, sex, education, and occupation.

The results of the preliminary study at Semarang Hospital were obtained from 25 patient guards. Seventy-five percent (75%) did not carry out infection control activities such as hand washing, 32% disposing of garbage in the place, and using the same cutlery with the patient on the grounds that the patient's meal was not consumed immediately by family.

The purpose of this study was to determine the factors that influence the patient's nosocomial infection control behavior.

## **2. Method and Materials (Helpful Hints)**

The method used in this research is the method of observation with cross sectional approach. All patients in this study were hospitalized waiting for treatment. Sample: as many as 61 people waiting inpatients. Use the sampling technique of target sampling. Data collection: data sources used in this study are primary data and secondary data, data collection techniques by using questionnaires, aids in collecting data such as bakers and stationery. Univariate data analysis is using frequency distribution table, while bivariate data analysis is using Pearson correlation test and chi-square.

## **3. Results and Discussions (Other Recommendations)**

Based on Table 1, some respondents are female (83.6%) and male respondents are 10 people (16.4%). Most of the respondents had 21 (34.4%)—middle school education level, 18 people (29.5%)—primary and high school, and 4 (6.6%)—colleges. Most of the respondents employed were housewives (IRT) as many as 28 people (45.9%), private workers as many as 23 people (37.7%), and labor work as many as 10 people (16.4%).

Based on Table 2, respondents that behaved less are as many as 27 people (44.3%), moderate behavior—21 people (34.4%), and good behavior—as many as 13 people (21.3%).

These results are in line with research of Afifah (2010) [10] precautions nosokomial infection in the category as much as 35 people (45.54%). Supported by research of Suryaningtyas [11], infection control behavior in the form of hand hygiene of patient's family in negative category, 78.8% of patient's family did not obey hand washing.

Most of the respondents in this study did not wash their hands before contact with patients. They consider the most important time to wash their hands after contact with the patient, although not all respondents

**Table 1 Frequency distribution of respondents by characteristics: gender, education, and occupation.**

Variable		Frequency	Percentage (%)
Gender	Male	10	16.4
	Female	51	83.6
Elementary education	Primary school	18	29.5
	Middle school	21	34.4
	High school	18	29.5
	College	4	6.6
Employment	Private employment	23	37.7
	Labor	10	16.4
	IRT	28	45.9
Total		61	100

**Table 2 Frequency distribution based on behavioral control of nosocomial infections of family waiting patient.**

Variable	Frequency (F)	Percentage (%)
Less	27	44.3
Medium	21	34.4
Good	13	21.3
Total	61	100

**Table 3 Pearson correlation test result: age; chi-square test: gender, education, employment, with patient watcher’s control behavior.**

Variable	<i>p</i> -value
Age	0.000
Gender	0.187
Education	0.000
Employment	0.000

do so. Then almost the entire patient’s family sat and even stayed in the patient’s room. This is because they are afraid to leave patients alone without supervision.

The above conditions have an impact on the inhibition of healing and recovery of the patient, even can lead to increased morbidity, and mortality. Nosocomial infections also cause LOS to increase 5-10 days, so the cost increases and eventually leads to the decrease of the quality of services in health care institutions [7].

Based on Table 3, infection control efforts are needed from the hospital for patient care. Factors that influence the patient’s waiting behavior in infection control include predisposing factors (age, educational level, occupation), and other drivers (example of the leaders of health workers/nurses). The driving factor may affect the behavior of the waiter/family because there is an example (change agent) directly [9, 12].

An effort that the implementing nurse can do to change the patient’s waiting behavior is to have a clinical leadership primarily in the nursing service’s improving service domain. Clinical leaders are people who are experts in communicating, being role models, motivators and beliefs and applying nursing values in nursing practice [13].

The result of hypothesis testing to see the correlation between age and patient infection control behavior is obtained *p*-value 0.000 ( $p < 0.05$ ) which means  $H_0$  is rejected and  $H_a$  accepted, meaning there is a significant relationship between age with patient infection control behavior with direction correlation (-) and strong correlation power. Mentions the more age, the maturity and strength of a person will be more mature in thinking and working.

The result of hypothesis testing to see the relation between sexes with patient infection control behavior

got  $p$  value 0.187 ( $p < 0.05$ ), meaning  $H_0$  accepted and  $H_a$  rejected, meaning there is no significant relation between sexes with infection control behavior of watcher patient.

The result of hypothesis testing to see the correlation between education and patient infection control behavior is obtained  $p$  value 0.000 ( $p < 0.05$ ) which means  $H_0$  is rejected and  $H_a$  accepted, which means there is a significant relationship between education with patient infection control behavior with direction correlation (+) and strong correlation strength.

Low level of education causes that the knowledge available to respondents is also limited. This is because education is a process of delivering materials/educational materials to achieve a change in behavior. In the absence of additional information that reaches the respondents, it will have little knowledge that has an impact on the absence of behavior change in respondents [14, 15]. Based on the cross-table education level with the patient's nosocomial infection control behavior can be seen that there is a relationship between levels of education with respondent behavior.

The result of hypothesis testing to see the correlation between work and patient infection control behavior is obtained  $p$  value 0.000 ( $p < 0.05$ ) which means  $H_0$  is rejected and  $H_a$  accepted, which means there is a significant relationship between the work with patient infection control behavior with direction correlation (-) and strong correlation power.

The work also affects the patient's infection control behavior of the respondents. Respondents who are largely unemployed or take on the role of housewife have limited scope of interaction, so information derived from sensing and everyday experiences is also limited. In addition, based on cross-charts it can also be seen that most respondents have no job or take the role of housewife, have behavior with fewer categories.

## 4. Conclusions

### 4.1 Conclusion

Based on the results of the correlation test, there was a significant correlation between patient infection control behavior with age ( $p = 0.000$ ), education ( $p = 0.000$ ), and occupation ( $p = 0.000$ ).

Based on correlation test results obtained, there is no significant relationship between patient infection control behavior with genders ( $p = 0.187$ ).

### 4.2 Suggestions

The lack of patient infection control behaviors can lead to nosocomial infections, so that interventions may improve patient infection control behavior through the nurse.

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