

Analysis of Risk Factors Affecting the Occurrence Nosocomial Infections in Pediatric Inpatient Rooms

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ABSTRACT

Nosocomial infections are infections that occur in patients, caregivers in hospitals or other healthcare facilities. These infections can affect various organs, such as the urinary tract, lungs, gastrointestinal tract, brain membranes, and surgical wounds. Nosocomial infections can be the biggest cause of death in patients undergoing hospitalization. The general objective of this study was to determine the risk factors that influence the occurrence of Nosocomial infections in the Pediatric Ward of RSU. Royal Prima Marelan. This type of research is quantitative research, the research design uses case control by looking at primary data from questionnaires and secondary data from patient medical records. Data collection from April to May 2025. Analysis used by univariate analysis, bivariate with chi square, multivariate with multiple logistic regression. The results showed that the three variables had a significant effect, namely nosocomial infection prevention measures, factors that influence the occurrence of nosocomial infections, and the Infection Control Program influenced each other from cases of nosocomial infections at Royal Prima Marelan Hospital with a sig p-value <0.05. Variable Nosocomial Infection Prevention Measures with an OR value of 28.367. Variable Risk Factors Affecting the Occurrence of Nosocomial Infections with an OR value of 9.462. The most dominant factor influencing the prevention of Nosocomial Infections at Royal Prima Marelan Hospital is Nosocomial Infection Prevention Measures with an OR value of 28.367. Prevention of nosocomial infections is expected to be carried out by applying aseptic and antiseptic principles during medical actions. good cooperation between staff from various professions involved in patient care is very important in infection control programs.

Keywords: *Infection Prevention and Control*

INTRODUCTION

Nosocomial infections are infections that occur in patients, caregivers in hospitals or other healthcare facilities. These infections can affect various organs, such as the urinary tract, lungs, gastrointestinal tract, brain membranes, and surgical wounds. Nosocomial infections can be the biggest cause of death in patients undergoing hospitalization. Nosocomial infections that occur in the world, based on the WHO prevalence survey, show that an average of 87% of patients experience Nosocomial infections. On this occasion, it was identified that more than 1.4 million people in the world experienced complications of Nosocomial infections. Data on Nosocomial infections in Indonesia in 2021 showed that the infection rate of

Nosocomial for ILO (surgical site infection) 18.9%, UTI (urinary tract infection) 15.1%, IADP (primary bloodstream infection) 26.4%, pneumonia 24.5% and other respiratory tract infections 15.1%, and other infections 32.1% (Dhamanti, 2021). Based on data from the

Infection Prevention and Control committee of the Hospital. Haji Adam Malik in 2018, the incidence rate of Nosocomial VAP infection reached 10.71%. The incidence rate of Nosocomial SSI infection reached 3.81%. While the incidence rate of Nosocomial IADP infection was 2.72% and UTI was 2.39%. In 2019 the incidence rate of VAP Nosocomial infection reached 8.03%, UTI 1.45%, IADP 1.09% and the lowest IDO at 0.91%. The problem in this study is how to analyze the risk factors that affect the occurrence of Nosocomial infections in pediatric care at RSU. The general objective of this study is to determine the risk factors that affect the occurrence of Nosocomial infections in the Pediatric Ward of RSU. Royal Prima Marelان. The general objective of this study is to determine the risk factors that influence the occurrence of Nosocomial infections in the Pediatric Ward of RSU. Royal Prima Marelان.

METHODS

This type of research is quantitative research. The research design uses a case control design. Cases (cases) are all patients who suffer from Nosocomial infections in RSU. The reason for choosing a case control design is to find etiology in cases that are rarely found, the length of the study is relatively short (Suradi, et al in Sastroasmoro & Ismael, 2007). The population in this study were all pediatric patients or accompanying families who were admitted to the Pediatric Inpatient Hospital of RSU. Royal Prima Marelان in the period April to May 2025. The sample in this study were all pediatric patients or their companions as pediatric inpatients at RSU. Royal Prima Marelان.

The data analysis technique is Regression Analysis.

RESULTS

Table 1. Influence of Risk Factors Affecting the Occurrence of Nosocomial Infections to Patients at Royal Prima Marelان Hospital in 2024

Variabel	t	Sig	B
Faktor Resiko Yang Berhubungan Dengan Infeksi Nosocomial	4.275	0.001	28.367
Rantai Penularan infeksi Nosocomial	0.342	0.734	0.064
Program Pengendalian Infeksi	0.369	0.713	0.088

Based on Table 4.13, after the first stage of multiple logistic regression test, it is known that the risk factors that influence the occurrence of Nosocomial infections to patients at Royal Prima Marelان Hospital have a significance p-value <0.05. The second stage multiple logistic regression test was carried out on variables with a p-value <0.05, at this stage the physical evidence variable was excluded in the second stage.

Table 2. Multiple Linear Regression Analysis of Risk Factors Affecting the Occurrence of Nosocomial Infections to Royal Prima Marelان Hospital Patients in 2024

Infeksi Nosocomial	B	Sig	F
Rantai Penularan infeksi Nosocomial	0.024	0.001	9.462
Faktor Resiko Yang Berhubungan Dengan Infeksi Nosocomial	0.151	0.005	1.439
Program Pengendalian Infeksi	0.008	0.001	2.838

Table 4.14 shows that the results of the multicollinearity test in multiple linear regression analysis show that there is a correlation (strong relationship) between the variables of Risk Factors Affecting the Occurrence of Nosocomial Infections to Patients, and Risk Factors Affecting the Infection Control Program. Both variables obtained a significant p value <0.05. This means that both variables have a strong influence that results in the occurrence of Nosocomial infections.

Table 3. Influence of Causal Factors, Actions taken to prevent Nosocomial Infections for Patients at Royal Prima Marelan Hospital in 2024

Variabel	B	Sig	Exp (B)
Program Pengendalian Infeksi	28.367	0.001	21.670
Rantai Penularan infeksi Nosocomial	0.064	0.003	0.004
Faktor Resiko Yang Berhubungan Dengan Infeksi Nosocomial	0.088	0.003	0.404

The Hosmer-Lemeshow (HL) test indicates the suitability of the logistic regression. The analysis compares the observed incidence rate with the expected one. Based on Table 4.15, it shows that the results of the third stage of multiple logistic regression test obtained a significant value of the variable Risk Factors Associated with Nosocomial Infections, Chain of Transmission of Nosocomial infections, Infection Control Program has a sig p-value <0.05. This means that the three variables Nosocomial Infection, Factors Causing Infection, Preventive Measures affect each other from cases of Nosocomial infection at Royal Prima Marelan Hospital.

DISCUSSION

The general objective of this study was to determine the risk factors that influence the occurrence of Nosocomial infections in the Pediatric Ward of RSU. Royal Prima Marelan. The specific objectives of this study are Knowing intrinsic factors such as age, gender and nutritional status that most influence the occurrence of Nosocomial infections in the pediatric hospitalization room at RSU. Knowing extrinsic factors such as invasive actions, duration of invasive actions, antibiotic therapy that affect the occurrence of Nosocomial infections in the pediatric hospitalization room at RSU. Royal Prima Marelan. The results showed that the three variables, namely nosocomial infection prevention measures, factors that influence the occurrence of nosocomial infections, Infection Control Program, influenced each other from cases of nosocomial infections at Royal Prima Marelan Hospital with a sig p-value <0.05. From the results of this study, prevention of nosocomial infections is expected to be carried out by applying aseptic and antiseptic principles during medical actions. good cooperation between staff from various professions involved in patient care is very important in infection control programs.

CONCLUSION

Nosocomial infections are infections that occur in patients, nurses in hospitals or other health care facilities. This infection can attack various organs, The general objective of this study is to determine the risk factors that influence the occurrence of Nosocomial infections in the Pediatric Ward of RSU. Royal Prima Marelan.

such as urinary tract, lungs, gastrointestinal tract, brain membranes, and surgical wounds. The results showed that the three variables had a significant effect, namely nosocomial infection prevention measures, factors that influence the occurrence of nosocomial infections and the Royal Prima Marelán Infection Control Program with a sig p-value <0.05. The most dominant factor influencing the prevention of nosocomial infections at Royal Prima Marelán Hospital is the preventive measures of nosocomial infections with an OR value of 28.367

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