Overview Of Nurse's Knowledge About Nosocomial Infection: Literature Review

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ABSTRACT

Background: Nosocomial infections or also known as hospital-acquired infections occur in patients who are hospitalized for at least 72 hours and these patients do not show symptoms of infection when admitted to the hospital. Nurses can take actions that result in nosocomial infections if they have poor knowledge about nosocomial infections. Objective: This study aims to describe the knowledge of nurses about nosocomial infections. Methods: The method is a literature review by searching sourced from an electronic database including Google Scholar and DOAJ from 2014-2019 using 15 journals related to the description of nurses' knowledge about nosocomial infections. Results: The results of the literature review showed that there were 8 articles on good knowledge of nurses, 6 with sufficient knowledge, and 1 article with less knowledge. Conclusion: Knowledge of a good nurse can be influenced by several factors including Age, length of work, level of education and training followed. Because good knowledge of nurses can prevent nosocomial infections.

Keywords: *Knowledge, Nosocomial Infection, Nurse*

Introduction

The hospital is a health service system in which there is a surveillance system as an effort to control and prevent infection. Hospitals have a strategic role to improve the health of the Indonesian people. Health improvement starts from patient safety such as washing hands before touching patients, sterilizing tools, using sterile gloves when performing sterile actions, monitoring infections, and conducting medical audits (Siulina, 2018).

Quality nursing services are a determining factor for patient satisfaction levels. The better nursing services provided will increase patient satisfaction. Nursing services as the front line play a very high role in the satisfaction received by patients (Widiasari, Handiyani, & Novieastari, 2019). Patients are people who need the help of health workers because of their illness, while health workers are people who are asked for help because of their professional abilities who are considered capable of treating diseases (Pramono, 2018). As for the arguments of the Qur'an that explain the help of fellow human beings. In the Qur'an surah At-taubah verse 71 which means: *"And those who believers, men and women, some of them (are) helping others. They command (do) what is right, prevent what is evil, establish prayer, pay zakat and they obey Allah and His Messenger. They will be given mercy by Allah; Verily Allah is Mighty and Wise."*

The above verse describes the believers, male and female, who believe in Allah and His Messenger, some of them are helpers for others. They ordered people to believe and do righteous deeds and forbade them from unbelief and immorality, praying, giving zakat, obeying Allah and His Messenger and they avoided saying what they were forbidden to do. They will be blessed by Allah, then He will save them from His torment and enter them into His Paradise, verily Allah is Mighty in His kingdom, Wise in establishing the teachings of the Shari'a and His laws.

The patient is said to have a nosocomial infection if at the time of admission to the hospital there is no infection then after being treated for 48-72 hours the patient becomes infected. Infectious diseases are still the main cause of high morbidity and mortality in the world. One type of infection is nosocomial infection. This infection causes 1.4 million deaths every day worldwide. Nosocomial infection itself can be interpreted as an infection that a person acquires while in hospital. Currently, the incidence of nosocomial infections has become one of the benchmarks for the quality of hospital services (Tumiwa, 2019).

Nosocomial infection is a health problem that increasingly requires attention in the health sector throughout the world, both in developing and developed countries. Nosocomial infectious diseases acquired in hospitals can be caused by bacteria, viruses, fungi, or parasites originating from within the patient's own body or from exogenous sources, namely from the environment (air, water), from medical devices (syringes, injecting drug solvents), breathing apparatus, venous catheters, transfusion equipment and other hospital equipment (tables, chairs, beds) that are contaminated (Ns. Zulkarnaini, S.Kep, 2018).

The percentage of nosocomial infections in hospitals in the world reaches 9% or more than 1.4 million inpatients in hospitals worldwide get nosocomial infections. A study conducted by the World Health Organization showed that about 8.7% of 55 hospitals from 14 countries originating from Europe, the Middle East, Southeast Asia and the Pacific showed nosocomial infections and for Southeast Asia as much as 10%. Nosocomial infections are the fourth killer in the United States and are

20,000 deaths each year due to this nosocomial infection. The incidence of nosocomial infections in Malaysia is 12.7% (Tumiwa, 2019).

Nosocomial infection data in Indonesia itself can be seen from surveillance data conducted by the Indonesian Ministry of Health in 2001 in 10 hospitals, the number of nosocomial infections is quite high, namely 6-10% with an average of 6.8% (Tumiwa, 2019).

Several factors that influence the occurrence of nosocomial infections include the lack of nurses paying attention to sterile techniques when carrying out the procedure, the level of invasion ability and the level of the ability of microbes to damage tissues, factors that exist in the patient such as age, gender, general condition of the patient, risk of therapy or the presence of other diseases. and nursing factors such as the length of the nursing process, service standards that are less than optimal and the density of patients in the room. If a nosocomial infection occurs, it can have an impact on longer hospital stays, increased costs, disturbing other patients who need treatment, being a direct or indirect cause of death in patients (Handojo, 2015).

Nurses' knowledge about nosocomial infections and their prevention is a social stimulation from the outside that can cause nurses' emotional responses to universal precaution efforts so that they will increase efforts to prevent nosocomial infections. The role of nurses in preventing nosocomial infections is very important, because an average of 7-8 hours a day nurses make contact with patients so that they can become the main source of exposure to nosocomial infections (Tumiwa, 2019).

Knowledge of infection prevention is very important for hospital staff and other health facilities are public facilities that are very dangerous, in the sense that they are prone to infection. The ability to prevent infection transmission in hospitals and infection prevention efforts is the first level in providing quality services (Damanik, 2018).

One strategy that has proven to be useful in preventing nosocomial infections in hospitals is to increase knowledge, attitudes and work experience as health workers in applying universal precautions, namely all efforts to prevent infection or disease transmission in health care units. Its main activities include washing hands to prevent cross infection, wearing gloves and personal protective equipment (such as masks, protective eyewear, etc.) to prevent contact with blood and other infectious fluids, as well as managing needles and other sharp tools to prevent transmission. , and management

Objective

The purpose of this study was to see a description of nurses' knowledge about nosocomial infections through the literature review method in several journals

Method

The method used in writing this literature review is by searching sourced from electronic data bases including Google Scholar 32 articles and Garuda Portal 23 articles. Through a search with the keywords knowledge, nurses and nosocomial infections, 55 articles were found. Researchers only collected articles published in the period 2014-2019 so that only 45 articles were obtained. The articles that were successfully selected were based on articles in Indonesian as many as 30 articles. Then the articles that were successfully selected were included in journal inclusions with full text pdf were 20 articles. Included articles answered research questions/answered literature review of 15 articles.

The data obtained were analyzed, compiled systematically, compared with each other and discussed related literature.

Results

The results of the literatul review and it was found that there were 8 articles of good knowledge of nurses, 6 with sufficient knowledge and 1 article with less knowledge. The related journals are as follows:

NO	Title and Author	Concept And Aim of the Study	Stydu Design and Instrument	Sample Caracteristic	Session/ Implementation	Result
1	Relationship between knowledge and prevention and control of nosocomial infections in hospitals Heriyati, H., & Astuti, A. (2020)	To find out the correlation between knowledge of nurses and midwives on prevention of nosocomial infections at the Majene Regency General Hospital	This type of research is a quantitative research with a cross sectional approach. The data was processed univariately and bivariately using the Chi Square Test	The population of this study were all nurses and midwives in the internal operating room and ob-gyn in Majene Hospital. The samples of this study were 28 nurses in the internal room, 19 surgeons and 19 midwives in Obgyn	In Majene Regency General Hospital, Internal Room, Surgery Room and Obgyn in Majene Hospital. Data Collected with observation sheets and questionnaires	There is a correlation between Respondents' Knowledge of Prevention and Control of Nasocomial Infections with a Significance Level of P = 0.000. It means that there is a relationship between the level of knowledge on the prevention and control of nosocomial infections in the Majene Regency General Hospital
2	Knowledge Relationship And Nurses' Attitudes About Preventing Nosocomial Infections With Nurse Compliance In Washing Hands In Irina C1 And C2 Hospital Prof Dr R. D Kandou Manado City (Angelia Pondaa, Semuel S. Kumajas, 2019)	To find out the relationship between knowledge and attitudes of nurses about prevention of nosocomial infections with nurses' compliance in washing hands at Irina C1 and C2 RSUP Prof Dr R. D Kandou Manado City	The type of research used in this study is descriptive analytical method with a cross-sectional study approach. Data Analyzed Using Chi-Square . Statistical Test	The population in this study were all nurses at Irina C1 Da C2 RSUP Prof Dr R. D Kandou Manado City, as many as 37 people.	The Research Was Conducted In Irina C1 And C2 Hospital Prof Dr R. D Kandou Manado City Data Collected Through Questionnaires	Based on Statistical Test Results Using Chi-Square Obtained For The Relationship Of Knowledge With Hand Washing Compliance -Value=0.002 While the Relationship between Attitude and Handwashing Compliance -Value = 0.005 Less Than Alpha = 0.05. It means that Ho is rejected, so there is a relationship between knowledge and attitudes of nurses about prevention of nosocomial infections with hand

						washing compliance at Irina C1 and C2 RSUP Prof Dr R. D Kandou Manado City
3	The Relationship of Nurses' Knowledge About Nosocomial Infections To Preventing Behaviors Of Nosocomial Infections In The Surgical Room Of RS Salak, Bogor City (Aliyupiudin, 2019)	To determine the relationship between nurses' knowledge about Nosocomial Infections on Behavior of Prevention of Nosocomial Infections in the Surgical Room of Salak Hospital, Bogor City.	This type of research uses descriptive quantitative analysis with cross sectional research design	The sampling method used was total sampling, with the population being all nurses in the operating room and 30 respondents obtained data	The study was conducted in the operating room of the salak hospital, Bogor. Data collection was obtained through the distribution of questionnaires.	The results of the study show that from a total of 30 respondents, 17 respondents (56.7%) Declaring Nurses Have Good Knowledge, 18 Respondents (60.0%) Declare Nurses Behave Positively. Results of Nosocomial Infection Prevention Behavior There are 16 respondents (53.3%) Nurses Have Knowledge with Positive Behavior. Statistical Test Results Obtained P Value = 0.000 Which means P Value <0.05
4	Overview of the Implementation of Preventing Nurse Nosocomial Infections in the HCU Room and Inpatient Hospital X in Bali (Trisnawati, 2018)	This study aims to describe the implementation of prevention of nasocomial infections in nurses in the HCU room and inpatient care at Hospital X in Bali.	This Research Uses Analytical Descriptive Design With a Cross Sectional Approach	Respondents in this study consisted of 30 nurses in the HCU and inpatient rooms taken based on the simple random sampling technique	The Research Was Conducted In The HCU Room And Inpatient Hospital X In Bali. Data collection is done by filling out a questionnaire of knowledge, attitudes and observations of nursing actions	The results showed that nurses in the HCU room had good knowledge (53%) positive attitude (93%) and moderate actions (46.7%) while in the inpatient room it was found that nurses had good knowledge (53.3%), Positive Attitudes (86.7%) and Moderate Actions (33.3%) Regarding the Implementation of Nosocomial Infection Prevention. Based on the results of the study, the researcher suggests that nurses who work in the HCU and inpatient rooms can carry out preventive measures for nosocomial infections in accordance with

					standard hospital operating procedures to prevent cross-infection.
5	The relationship between nurses' knowledge about nosocomial infections and their prevention measures Post-surgery Patients In Inpatient Imelda Hospital Medan

(Damanik, 2018) | This study aims to determine the relationship between nurses' knowledge about nosocomial infections and their prevention measures in postoperative patients in the Imelda Hospital Medan 2018 Inpatient Room. | Types of Correlation Descriptive research. Data Analyzed Using Univariate And Bivariate Analysis | The population in this study were all 205 nurses in the Imelda Hospital Inpatient Room. The sample is hemodialysis patients, the sampling of the study was carried out using a nonprobability sampling technique, namely purposive sampling. | The location of this research was carried out in the Inpatient Room of Imelda Hospital Medan. Data were collected using a questionnaire. | The results of research conducted using the Spearman Rank Test to see the relationship between nurses' knowledge about nosocomial infections and their prevention measures in postoperative patients, the results obtained with a probability value (P) = 0.011 (P < 0.05) Which means that there is a relationship with the strength of the relationship (R) = 0.452, It means that the strength of the relationship is sufficient and this relationship is positive, which means that if the nurse's knowledge about nosocomial infections is sufficient, the value of the action is sufficient. Prevention |
| 6 | factors related to the performance of implementing nurses in carrying out the prevention of nasocomial infections in the inpatient rooms of government hospitals and Makassar private hospitals

(Hamzah, 2018) | To Determine The Relationship Of Knowledge, Motivation, Supervision, And Workload With Nurse Performance In Implementing Nosocomial Infection Prevention. | The type of research used is quantitative with a cross sectional study approach. The Data Analysis Used Is Univariate And Bivariate With Chi-Square Test And T-Test | The population in this study were all implementing nurses with civil servant status in the inpatient installation of HAJI Hospital and Stella Maris Hospital Makassar, totaling 355 nurses. The number of samples is 127 respondents. | This Research Was Conducted In The Inpatient Room Of The Government Hospital And The Makassar Private Hospital. This Data Retrieval Using Questionnaires And Observation Sheets. | The results showed that there was a significant relationship between knowledge and nurse performance in preventing nosocomial infections (P = 0.047), there was no significant relationship between motivation and nurse performance in preventing nosocomial infections (P = 0.322), there was a significant |

						relationship between Supervision With Nurse Performance In Implementing Nosocomial Infection Prevention, (P = 0.000), And There Was No Significant Relationship Between Workload And Nurse Performance In Implementing Nosocomial Infection Prevention In Inpatient Installations HAJI Hospital and Stella Maris Hospital Makassar (P = 0.200). The Hospital Should Provide Trainings To Nurses About Nosocomial Infections And Create Special Programs To Prevent Nosocomial Infections And Assign Tasks To Nurses In Accordance With Their Competence.
7	Overview of Nurses in Preventing Nosocomial Infections at Dr H Soewondo Hospital Kendal (Arifianto, Aini, And Kustriyani, 2018)	The aim of the study was to explore the description of the prevention of nosocomial infections in RSUD Dr. H. Soewondo Kendal	Research Method Using Qualitative Research Design With Phenomenological Approach.	Informants in this study are nurses. Determination of the Sample Using Purposive Sampling.	Data Collection With In-depth Interviews With Informants Using Voice Recorders.	Data Collection With In-depth Interviews With Informants Using Voice Recorders. The results of the study can identify several themes related to the research objectives, namely nurses' knowledge of nosocomial infections, implementation of hand hygiene by washing hands, implementation of the use of PPE, and separation of hospital waste. Suggestions for nurses are expected to pay more attention to and improve prevention

					of nosocomial infections in hospitals as an effort to maintain patient safety.
8	The Effect of Nurse Knowledge Levels with Nosocomial Infection Prevention Behavior in the Nursing Room of Rs Tajuddin Chalik Makassar (Maria Sumaryati, 2018)	The purpose of this study was to determine the relationship between knowledge, education and length of work of nurses on efforts to prevent nosocomial infections	The Research Method Used Is Descriptive. Data Analysis Using Univariate	The population in this study were nurses who performed catheter care. Total Sample A total of 24 respondents. Sampling Techniques Total Sampling	In the Nursing Room of Rs Tajuddin Chalik Makassar Data Collection Using Observation Sheets and Questionnaires	The results obtained showed that the respondents who have good knowledge and have good Nosocomial Infection Prevention Behavior are 10 people (38.5%) while those who have poor knowledge and good Nosocomial Infection Prevention Behavior are 5 people (19.2%). Respondents who have low knowledge and are less able to carry out efforts to prevent nosocomial infections well are 10 people (38.5%)
9	Overview of Nosocomial Infection Risk Factors in Nurses in the Inpatient Room of the Haji Regional General Hospital, Makassar City (AMRULLA H, 2017)	To find out the description of the risk factors for nosocomial infection in nurses in the inpatient ward of the Haji Regional General Hospital, Makassar City	This type of research is quantitative with an observational descriptive approach	In this study there were 121 populations with 74 samples, where samples were drawn by accidental sampling.	This research was carried out in the inpatient room of the Haji Regional General Hospital, Makassar City. The Research Used Is a Questionnaire	From the results of the study it is known that from 76 respondents there are 56 (75.7%) respondents who have sufficient knowledge and 18 (24.3%) respondents with less knowledge, 71 (95.9%) respondents with positive attitudes and 3 (4 ,1%) Respondents With Negative Attitudes, 66 (89.2%) Respondents With Positive Actions and 8 (10.8%) Respondents With Negative Actions And For Nurses' Work Environment Variables Can Be Said To Be Good, Although There Are Still Some Things That Should Be Improved .

10	Nurse's Knowledge in Avoiding Nosocomial Infections in Patients and Families in Hospitals (Aminullah harahap, 2015)	The purpose of this study was to determine the knowledge of nurses in avoiding nosocomial infections in patients and families in hospitals	This study uses a descriptive correlative type which aims to determine the correlation between variables and the research design uses cross sectional	The number of respondents in this study were 50 respondents. the gender of female respondents is 35 and male respondents are 15	The research was carried out in the hospital in 2015. Instruments Used Knowledge Questionnaire Sheet and Observation Sheet	The results of the study that the majority of nurses' knowledge about prevention of nosocomial infections was sufficient, the majority of nurses' actions about prevention of nosocomial infections were poor.
11	The Relationship between Knowledge and Attitude of Paramedics (Nurses) Against Nosocomial Infection Control Measures in Class III Inpatient Rooms at Abdul Moeloek Hospital Bandar Lampung (Prima, 2015)	The purpose of this study was to determine the relationship between knowledge and attitudes of paramedics (nurses) on measures to control nosocomial infections in the Class III Inpatient Room at Abdul Moeloek Hospital Bandar Lampung.	This Research Method Using Analytical Observational Research. Data Analysis Using Gamma . Statistical Test	The population of this study were all medical personnel (nurses) who were on guard in the Class III Inpatient Room Surgery Section of Mawar, Kutilang, Wren and Kemuning RSUD Dr. H. Abdul Moeloek Bandar Lampung 2015 Totaling 48 People With Total Sampling Method.	The research was carried out in the Class III Inpatient Room at the Abdul Moeloek Hospital Bandar Lampung. Data were collected using a questionnaire sheet and an observation sheet.	The results showed that most of the respondents had a level of knowledge, attitudes and actions about controlling nosocomial infections with good criteria. The results of the test using the Gamma Test are obtained for the P-Value of Knowledge and Action Relationship of 0.614 and the P-Value of Attitude and Action Relationship of 0.818 and both have a value > (0.05) Table
12	Relationship Of Knowledge, Attitude With Nurse's Practice In Preventing Al Nosocomy Infection In The Inhancement Of Kendal Islamic Hospital (Yunita Puspasari, 2015)	The aim of the study was to determine the relationship between knowledge, attitude and practice of nurses in preventing nosocomial infections in the Kendal Islamic Hospital Inpatient Room.	Types of Correlation Descriptive Research With Cross Sectional Approach. Data Analysis Using Spearman Rho	The population in this study were nurses on duty in the inpatient room: Hamzah Room, Usman Room, Alfat Room, Roudhoh Room, Lukman Room, Umar Room, Kendal Islamic Hospital, namely 55 nurses. research sample using total sampling	Hamzah Room, Usman Room, Alfat Room, Roudhoh Room, Lukman Room, Umar Room, Kendal Islamic Hospital, Instruments In This Research Using Questionnaires.	There is a relationship between knowledge, attitude and practice of nurses in preventing nosocomial infections in the Kendal Islamic Hospital Inpatient Room with P-Value values of 0.002 and 0.017
13	Nurse's Knowledge About Nosocomial Infections in Room D2 and	This study aims to identify the knowledge of nurses about nosocomial infections in	The type of research used is descriptive. Descriptively Analyzed Data	The population of all implementing nurses in the D2 and D3 rooms is 47 nurses, the	The research was carried out in rooms D2 and D3 of Adi Husada Undaan	The results showed that 77% of nurses already had good knowledge about nosocomial infections.

	D3 Adi Husada Hospital Undaan Wetan Surabaya (Handojo, 2015)	rooms D2 and D3 Adi Husada Hospital Surabaya.		number of samples is 44. Using Non Probability Sampling: Purposive Sampling	Wetan Hospital, Surabaya. Data Collection Using Questionnaires.	Knowledge of a good nurse can be influenced by several factors including: age, length of work, level of education and training followed.
14	The Relationship of Nurses' Knowledge About Universal Precaution With Nosocomial Infection Prevention Measures At Rs. R.M Dr. Djoelham City of Binjai (Budiana Yazid, 2014)	The purpose of this study was to determine the relationship between nurses' knowledge about universal precautions and prevention of nosocomial infections at Dr Djoelham Binjai Hospital.	This type of research is analytic with cross sectional design, data is analyzed using univariate	The population in this study were all nurses in the ICU, Nutmeg Room and Clove Room at RSU Dr. Djoelham Binjai A total of 58 people. The Sampling Technique In This Research Is Using The Total Sampling Technique,	In the ICU Room, Nutmeg Room and Clove Room, Dr. Djoelham Binjai, the type of data collection used is a questionnaire and secondary data obtained from the medical records of Dr. RSU. RM Djoelham Binjai.	There is a Relationship between Nurses' Knowledge About Universal Precaution and Nosocomial Infection Prevention Measures
15	Knowledge and Attitude of Nurses Prevention of nosocomial infection prevention in the implementation of hand washing (rita rahmawati, mey susanti, 2014)	The purpose of this study was to explain the relationship between knowledge and attitudes of nurses about preventing nosocomial infections with the implementation of hand washing	This study uses a cross sectional design, data analysis using the Spearman rank correction test	The population in this study were nurses in the Flamboyan, Gardena, and Wijaya Kusuma rooms at Ibnu Sina Hospital Gresik, using purposive sampling, 36 respondents were taken based on inclusion criteria.	the flamboyant gardena and wijaya kusuma rooms at the Ibn Sina Gresik Hospital, the instruments in this study were questionnaires and observations.	the results showed that there was no relationship between nurses' knowledge about preventing nosocomial infections by washing hands, with a significant level of 0.246 (A)> 0.05. Attitudes Show There is No Relationship Between Nurses' Attitudes About Prevention of Nosocomial Infections By Washing Hands, Significant Level 0.285 (A)> 0.05.

Discussion

From the results of the literature review articles that have been described, all use questionnaires and observation sheets, so that they can be used as the basis for journal reviews.

For a health worker, especially an implementing nurse who directly provides nursing care to patients in hospitals, knowledge and skills are needed to prevent nosocomial infections. The results of the WHO study, among others, stated that the average nurse did not prepare themselves adequately in performing more than 70% of clinical skills. In addition, more than 50% of nurses have never participated in alertness training in the last 5 years, especially nosocomial infections (Sumaryati, 2018).

The incidence of nosocomial infections has not been matched by an understanding of how to prevent nosocomial infections and good implementation. This condition allows the incidence of nosocomial infections in hospitals to increase. Therefore, it is necessary to have a good understanding of the ways in which infections may spread in hospitals. The spread of infection in hospitals generally occurs in three ways, namely through air, splashes and direct contact with patients (Prima, 2015).

Several factors that influence the occurrence of nosocomial infections include the lack of nurses paying attention to sterile techniques when carrying out the procedure, the level of invasion ability and the level of the ability of microbes to damage tissues, factors that exist in the patient such as age, gender, general condition of the patient, risk of therapy or the presence of other diseases. and nursing factors such as the length of the nursing process, service standards that are less than optimal and the density of patients in the room (Handojo, 2015).

Various efforts have been made continuously to reduce the incidence of nosocomial infections. How to prevent this problem is to make an integrated plan, monitoring program, including limiting the transmission of organisms between patients by washing hands and using gloves, septic and aseptic measures, sterilization and disinfectants, controlling the risk of transmission from the environment, protecting patients with the use of antibiotics. Adequate nutrition, adequate nutrition and vaccination, limiting the risk of endogenous infection by minimizing invasive procedures, surveillance of infections, identifying and controlling outbreaks, prevention of infection in staff members, increasing the capacity of care staff, and providing additional education/training on nosocomial infections (Handojo, 2015) .

Prevention is also carried out by using standard precautions, including using Personal Protective Equipment (PPE) such as gloves, masks, protective clothing, maintaining patient equipment and sharp instruments, cleaning the environment, placing patients and performing 5 steps of hand washing, namely: Before and after touching the patient, before and after the procedure or aseptic, after exposure to the patient's body fluids, before and after performing invasive procedures, after touching the area around the patient or the environment (Handojo, 2015).

Conclusion

Based on the 15 journals analyzed by the researcher, it was stated that there was a picture of nurses' knowledge about nosocomial infections. Knowledge of a good nurse can be influenced by several factors including: Age, length of work, level of education and training followed. Because good knowledge of nurses can prevent nosocomial infections.

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