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Analysis of Factors Causing the Incident of Phlebitis in Efforts to Increase Patient Safety at Nahdlatul Ulama Permata Hospital Lumajang

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ABSTRACT

Phlebitis is an inflammatory of the vein walls caused by medical procedures in hospitals. The purposes of this research is to explore the factors causing the incidence of phlebitis at Nahdlatul Ulama Permata Lumajang hospital. This research uses a qualitative design with a descriptive approach. Data collection was carried out through in-depth interviews, observation and documentation with 30 respondens of emergency room and inpatient nurses. Data analysis was carried out descriptively using triangulation and analysis methods. The results of the analysis revealed that the factors causing the high incidence of phlebitis were lack of adaptation and master of the tools, lack of controlling and discipline of nurses in implementing their understanding. So it is hoped that agencies can carry out training and evaluate the type of infusion abocath that will be used, and improve the quality of supervision.

Keywords: nurse, phlebitis, skill, understanding

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BACKGROUND

Phlebitis is an inflammatory condition of the vein walls resulting from medical procedures performed in hospital settings (Sendoh et al., 2023). The occurrence of phlebitis represents a failure to meet patient safety standards, specifically Standard Patient Safety Goal (SKP) 5, which focuses on reducing the risk of healthcare-associated infections (Ministry of Health of the Republic of Indonesia, 2019). As a type of nosocomial infection, the international target for phlebitis incidence is set at below 5%, while in Indonesia, the target is more stringent—ranging between 1% and 1.5% (Falihin et al., 2023). However, the incidence of phlebitis in Indonesia has been reported to reach 50.11% in government hospitals and 32.70% in private hospitals (Falihin et al., 2023). In East Java, the reported incidence is approximately 0.5% (Suhardono et al., 2020). The local government of Lumajang Regency has established a reference threshold for the quality of healthcare services regarding nosocomial infections, including phlebitis, at less than 1.5% (Pemerintah Lumajang, 2020). According to data from the Infection Prevention and Control (PPI) Committee of RSNU Permata (2023), the incidence rate of phlebitis at the hospital over the past four months has ranged from 1.64% to 6.6% on a monthly basis.

METHODS

This study employs a qualitative research design with a descriptive approach. The researcher functions both as the primary instrument and as the data collector, making their presence essential throughout the research process. The study was conducted in the adult and pediatric general inpatient wards, as well as the emergency department of RSNU Permata Lumajang. The research period spanned six months and involved several phases: initial observation, proposal development, preparation of interview guidelines, data collection, data processing, and the writing of the final research report.

Data collection was conducted using two main methods. Primary data were obtained through in-depth interviews with 30 nurses from the inpatient and emergency departments. Secondary data included records of phlebitis incidents from medical records, observation sheets on phlebitis occurrences, and reports from the hospital's Infection Prevention and Control Committee (PPI). The variables examined in this study included compliance with standard operating procedures (SOP) for intravenous catheter insertion, understanding of the "Five Moments for Hand Hygiene," supervision practices, and the use of different types of intravenous catheters (abocaths). The instruments utilized for data collection consisted of a mobile phone for recording interviews and a structured interview guide. Data analysis followed a qualitative framework involving data reduction, data display, and the drawing of conclusions. This study has undergone ethical review and was granted ethical clearance under certificate number 001390/EC/KEPK/1/06/2024.

RESULTS

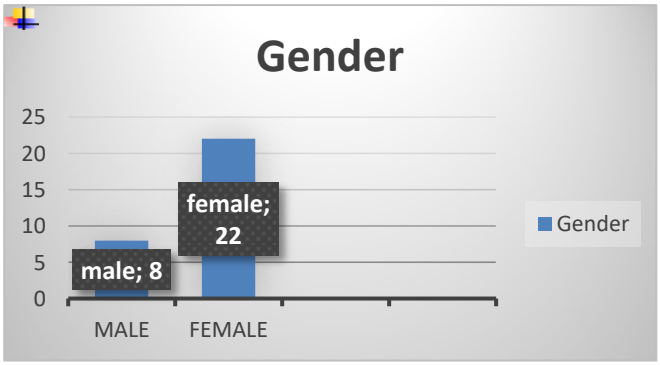

Figure 1. 1 Gender of the respondent

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In this research respondes consist of 27% of male respondent and 73 % is female respondent. This is because the majority of health workers at RSNU are women, with a gender composition consisting predominantly of women, the findings of this study may offer deeper insights into the experiences, perspectives, and needs of women within the researched setting, while still taking into account the contributions and viewpoints of male respondents who are also part of the study population.

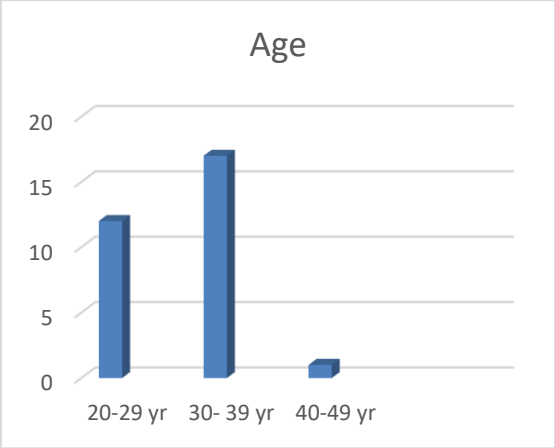

Figure 1.2 Age of the respondent

In this research the age of respondent spreading in three categories. First 20-29 years old consist 40 %, second 30-39 years old consist 56 %, and 40-49 years old 4%. The youngest respondent was 25 years old, while the oldest was 50 years old. This age range indicates a relatively wide variation within the respondent group, which may provide diverse perspectives for this study. The variation in respondents' ages enables the researcher to evaluate whether there are significant differences in perceptions and experiences related to the studied variables based on age.

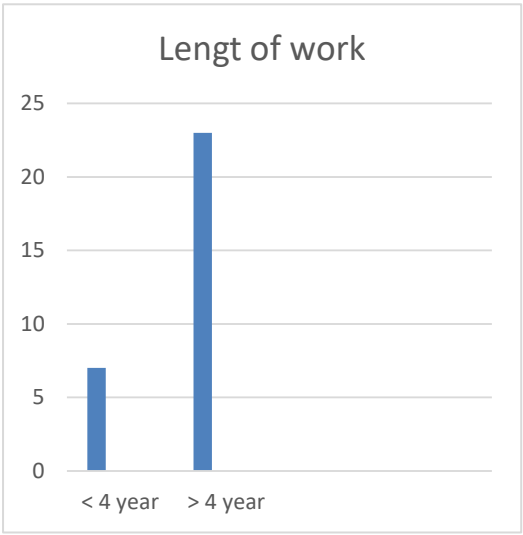

Figure 1.3 Length of work of respondent

In this research mean of length of work of all the respondent as a nurse is 4 years. The respondent who work less than 4 year consist of 23%, and respondent who have length of work more than 4 year consist of 72%. Among all respondents, the shortest duration of

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employment was 1 year, while the longest was 9 years. This variation in length of service may offer diverse perspectives on the dynamics and challenges faced by healthcare workers at different stages of their careers. Those with longer work experience may encounter distinct challenges, such as adapting to technological advancements and changes in health policies. In contrast, healthcare workers with shorter tenure may be more familiar with recent trends and practices but are still in the process of adjusting to the dynamic pace of work in the healthcare sector.

The compliance of SOP Infusion Installation

Respondents demonstrated a fairly good understanding of the SOP for Infusion Installation and acknowledged its usefulness in ensuring medical procedures run smoothly and safely for patients. The steps contained in the SOP at RSNU are considered crucial to minimize the risk of infection and other complications. Before installing an IV, things that need to be considered include sterilization of tools, hand hygiene, and identification of the correct location for puncture. Aseptic measures are considered very important to prevent contamination and maintain patient safety. The most commonly used puncture location is the peripheral vein, with the importance of nurses following SOPs to ensure a correct and safe procedure. Non-compliance with SOPs can have negative impacts on patients, such as infection or vascular damage, as well as having a negative psychological impact on nurses who feel responsible for the incident. Therefore, maintaining the SOP steps in sequence is considered essential to avoid mistakes that could endanger the health of patients and health workers.

Understanding of five moment of hand washing

Respondents demonstrated a strong understanding of the Five Moments of Handwashing concept, which was introduced as a global guide to effective hygiene practices in healthcare settings. They identified five critical situations in which hand washing should be performed, namely before patient contact, before aseptic procedures, after exposure to body fluids, after patient contact, and after contact with the patient's surrounding environment. The procedure for washing hands according to WHO guidelines, includes six important steps to ensure optimal hygiene, starting from wetting hands to drying with handrub or soap. The time needed to wash your hands with soap and water is around 40-60 seconds, while handrub takes around 20-30 seconds. Respondents agreed that using handrub with an alcohol content of at least 70% was more effective in reducing microorganisms than soap and water in certain situations. They also emphasized the importance of the Five Moments of Hand Washing in reducing the risk of phlebitis, and were aware of the negative impacts if this practice was not strictly followed by health workers, such as increasing nosocomial infections and the risk of disease transmission. Additionally, they recognize the serious consequences for patients if handwashing practices are inconsistent, such as nosocomial infections and avoidable health complications. To strengthen the Five Moments Handwashing culture, respondents suggested the need for continuous education, strict monitoring, and the availability of adequate handwashing facilities in all health care facilities.

Supervision

Supervision at RSNU Permata has a very important role in ensuring the quality of service and safety of patients and health workers. The respondents agreed that supervision is an important process that involves supervision, guidance and evaluation of the performance of health workers. Supervisors have the duty and authority to provide direction, evaluate performance, and ensure the implementation of standard operating procedures (SOP) in each work unit. Respondents considered supervision activities at RSNU Permata to be quite effective in improving service quality and reducing errors in medical practice. They also highlight that the presence of supervisors contributes positively to team motivation and performance, while the absence of supervision can negatively impact work quality and

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patient safety. Supervision is also considered a means of identifying and reducing errors and increasing awareness of the importance of patient and health worker safety protocols. However, almost all of the triangulation respondents agreed that supervision must be balanced by appropriate intentions and determination so that the results of the supervision will be maximized.

Type of Abbocath

The types of abocath infusion have various functions depending on the patient's clinical needs. However, there are certain types of abocath that are difficult to implement at RSNU Permata, which can increase the risk of installation errors. The impact of installing the wrong type of abocath is very serious, including the incidence of infusion failure which often occurs at RSNU Permata. Even though the quality of the abocath used is quite good, the high incidence of phlebitis associated with certain types of abocath remains a problem. The type of abocath that is often used is generally adjusted to the target patient, however the availability of the right size is very important to reduce the risk of phlebitis. Side effects from inappropriate use of Abocath are also a concern, with the Medicut type often cited as a cause of phlebitis and infusion failure. This incident shows the importance of selecting and handling appropriate abocaths to improve clinical outcomes and patient comfort at RSNU Permata.

DISCUSSION

The incidence rate of phlebitis at RSNU Permata can be considered relatively high. According to the report from the Infection Prevention and Control Committee (PPI) of RSNU Permata (2024), the average phlebitis rate over the past five months was approximately 3.78%. This figure exceeds the national target for phlebitis incidence, which ranges between 1–1.5%. The study findings indicate that nearly all respondents understood and complied with the standard operating procedures (SOP) for intravenous catheter insertion established at RSNU Permata. Regarding the "Five Moments for Hand Hygiene," almost all respondents demonstrated a clear understanding of the guidelines and were able to apply them properly in practice.

However, good comprehension must be accompanied by strong discipline to ensure that the expected outcomes are achieved. As noted by triangulation respondents, effective supervision requires more than just knowledge—it also demands intention and determination to instill self-discipline as a supervisor. The incidence of phlebitis should be reducible through strong understanding and compliance with the tested variables, which aligns with findings from previous studies. Therefore, the researcher argues that the aspect of discipline in implementing understanding and compliance must be strongly emphasized. The third variable in this context—supervision—plays a critical role in ensuring optimal outcomes. As explained by Seniawati et al. (2022), supervision encompasses not only monitoring but also controlling, evaluating, and providing feedback, all of which are essential to maximizing results.

In addition, the use of a specific type of intravenous catheter (abocath) should not merely be based on the device itself but must also take into account the familiarity of the healthcare provider with that device. As stated by Masakita et al. (2021), the use of an abocath requires not only technical skills in IV insertion but also adequate understanding of the characteristics of the specific catheter type. In phlebitis cases at RSNU, the type of abocath used is influenced not only by its classification but also by the level of familiarity the nurse has with it. Thus, policy decisions may be needed to require trial phases or introductory training for unfamiliar catheter types. This would allow users to become more proficient and potentially reduce the incidence of phlebitis.

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CONCLUSION

Supervision and the type of abocath used have a significant impact on the high incidence of phlebitis at RSNU. This finding aligns with the results of the study, which indicate that knowledge and compliance must be complemented by effective supervision as a control mechanism to ensure the desired outcomes are achieved. Respondents also reported that the use of butterfly-type abocaths more frequently resulted in vein rupture during intravenous administration, as this type tends to be more rigid than other models. This observation is further supported by triangulation findings, in which the majority of triangulation respondents stated that the butterfly-type abocath often leads to infusion failure due to its stiff design.

In contrast, the variables related to compliance with infusion procedures and understanding of the "Five Moments for Hand Hygiene" did not show a significant impact on the incidence of phlebitis. This is consistent with the findings, which revealed that most respondents understood and adhered to the standard operating procedures and hand hygiene guidelines. Based on these findings, it is recommended that the institution strengthen supervision of healthcare workers and revise the policy on the procurement and use of abocaths. These efforts are essential to improving service quality and reinforcing discipline among healthcare personnel.

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