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The Effectiveness of the Khanza Application Information System in Documenting Nursing Care in the ICU Room of Prof. Dr. H Aloei Saboe Gorontalo City

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ABSTRACT

A health information system is a system where there is quality information, and user satisfaction greatly affects the use of the system and its overall benefits. The Khanza application which is perceived to be of good quality and easy to use will increase nurse satisfaction and have an impact on the completeness of documentation. The method used in this study is observational analysis using the Cross Sectional approach. This describes the variables of the information system of the Khanza Application to the Documentation of nursing care, The sampling technique used in this study uses a non-probability sampling technique with the Total sampling method so that the number of samples in this study amounted to 40 respondents in the ICU room of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City. From the results of the study, the Khanza application information system in the ICU room from 40 respondents was obtained as many as 31 respondents (77.5%), included in the Good category in the use of information systems and as many as 9 respondents (22.5%) in the poor category. And the results of the study were obtained documentation of nursing care in the ICU room Of the 40 respondents, 31 respondents (77.5%), including in the documentation of complete nursing care and as many as 9 respondents (22.5%) in the documentation of incomplete nursing care. The results of the fisher exact analysis obtained a value of p (0.001) α 0.05. so it can be concluded that there is an Effectiveness of the Khanza Application Information System in Documenting Nursing Care in the ICU room of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City.

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INTRODUCTION

Nursing services are health services that are able to provide every user of health services in accordance with the level of happiness of the average community and organize it in accordance with work standards and codes of ethics that can be formalized reliably by familiarizing the existing personnel. Sourcing resources in a natural, efficient and effective way is informed in a convenient method and relieving appropriate rules, ethics, laws, and social habits by observing the limitations and power of the ruler and the client community is what is meant to think about the quality of nursing (Setiawan, 2023) .

Information systems can improve the quality of nursing services, minimize treatment costs, increase efficiency and effectiveness, and improve the quality of professions, work capabilities and hospital services (Damanik & Rani, 2020). The application of the nursing management information system must be clear and measurable by paying attention to the advantages and disadvantages of the information system based on the studies that have been conducted. Including in nursing documentation, documentation plays an important role in nursing management. Nursing documentation refers to any recording that is recorded manually or digitally,

which records in detail nursing services that can be used as verifiable evidence by the authorities (Dita, et al. 2022)

The information in nursing documentation is used to plan, evaluate, and predict the quality of nursing care in patients (Rezeki et al., 2021). Incomplete documentation or incorrect documentation can have a negative impact on the quality of nursing services because it hinders the ability to identify the extent of the success rate of nursing care that has been provided (Syah, 2020).

Nursing documentation is an important asset to support the implementation of nursing care. Nursing services are often used as a barometer by the community, in assessing the quality of hospitals, so in this case it is required that there is professionalism from nurses in work as shown by the results of nurse performance, both the implementing nurse and the manager in providing nursing care to clients, the performance of nurses will affect the quality of health services. (Siahaan et al., 2021)

A study by the Directorate of Nursing and Medical Technicians of the Ministry of Health of the Republic of Indonesia in collaboration with WHO in 2020 in 4 provinces in Indonesia, namely DKI Jakarta, North Sumatra, North Sulawesi and East Kalimantan, found 47.4 percent. Permenkes No.269/MENKES/PER/III/2008 concerning Medical Records in article 1 paragraph 1, states that medical records are files that contain records and documents about the patient's identity, examinations, treatments, actions and other services that have been provided to clients. Based on this Permenkes, it is hoped that Caregiver Professionals (PPA) are obliged to document every care provided to clients.

Documentation must pay attention to several aspects, namely data accuracy, breafity, and legality. Therefore, documentation is said to be of quality if the data written in accordance with the facts, the data is accurate, correct, complete, clear and the data is immediately recorded at that time, confidential and organized Documentation as evidence of the responsibility and responsibility of the nurse in carrying out her duties. If there is a problem related to the nursing profession, then the documentation can be used as evidence in Court. (Prabowo, 2019)

Incomplete documentation can pose risks such as errors in communication, in action planning, in taking action, so that it can ensnare nurses due to the absence of official documentation of legal value (Prabowo, 2019) . If the documentation is not carried out completely, it will reduce the quality of nursing services because it will not be able to identify the extent of the success rate of nursing care that has been provided. In addition, the information in nursing documentation is used to plan, evaluate, and predict the quality of nursing care in patients (Rezeki et al., 2021).

Incomplete documentation or incorrect documentation can have a negative impact on the quality of nursing services because it hinders the ability to identify the extent of the success rate of nursing care that has been provided (Syah, 2020). If the nursing care documentation is not filled out completely, this will have an impact on the important meaning of the nursing care documentation seen from various aspects, namely legal aspects, service quality, communication, finance, education and accreditation. (Ayu & Pasaribu, 2019)

Previous research studies conducted by Nguyen and Bellucci (2014) from Australia are as relevant in analyzing this issue as in the study of EHR (Electronic health records). The results of the analysis show an increase in the acceptance of EHRs (Electronic health records), despite concerns about the accuracy and completeness of records, interoperability with related systems, and the privacy and security of client health data.

Previous research studies conducted by Baumann (2021) are still from the same country conducting an analysis of the effects of EHRs on documentation time. The results of the analysis showed that as staff began to adapt to the new system, the proportion of time spent on documentation tasks seemed to increase for doctors, nurses, and intern doctors. A previous research study conducted by Sulastri and Sari (2020) from Indonesia stated that the existence of an electronic nursing documentation system can provide quick access to information, minimize the potential for loss or damaged information, reduce the cost budget and reduce the risk of errors in interventions.

The research study is in line with the research conducted by McCarthy (2019) from the state of Ireland which states that the implementation of electronic nursing documentation in hospitals is able to save time, reduce the rate of documentation errors, falls and infections.

Then a previous research study by Huter (2020) from Germany analyzed the effectiveness of digital technology in nursing. The results of the analysis show that technology has a positive effect on treatment, but the level of evidence is mostly low and the size of the study is often small. Almost no technology has been intensively researched to produce conclusive results.

Along with the development of the times, there are many developments in the world of technology, especially in health sciences. Documentation of nursing care is an important aspect where as legal evidence, it becomes communication between health teams, as well as the basis for evaluating nursing services. With technological advancements, there are now several hospitals that have used digital-based nursing information systems such as the Khanza application to support the documentation process.

Based on the results of a preliminary survey conducted by researchers at the hospital at Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City, the researcher obtained an information system used by nurses in

hospitals using the khanza application to access all patient data. The use of the application is expected to increase the effectiveness, efficiency, and accuracy in recording nursing care.

The results of the observation of interviews conducted by the researcher found that to understand how this application supports their work and the obstacles faced by the Khanza Application is used by all nurses in documenting nursing care. Each nurse has access to the system through a computer available in each unit. Documentation includes patient assessments, nursing interventions, and evaluation of treatment outcomes. The time required for documentation is faster compared to manual recording. The system allows for neater and easily re-accessible recordings. However, in its implementation, there are still several challenges that can affect the effectiveness of use in the system, such as the unfamiliarity of some nurses in using the digital system due to the implementation of the Khanza application as electronic documentation which is still relatively new, there are also obstacles such as technical problems such as network or device access, the time needed to adapt to the new documentation format.

RESEARCH METHODOLOGY

The research process involves identifying the problems before determining the final research plan. Data collection is carried out according to the established research framework. This study analyzes the effectiveness of the Clinical Application Information System in documenting nursing care in the ICU Room of Prof. Dr. H. Aloei Saboe Hospital (Nursalam, 2020).

The method used in this study is an analytical observational method with a cross-sectional approach. A cross-sectional approach is a research design that examines the relationship between exposure and outcome simultaneously in each research subject. This research describes the variables related to the implementation of the clinical information system. The purpose is to evaluate the effectiveness of the Clinical Application Information System in documenting nursing care in the ICU Ward of Prof. Dr. H. Aloei Saboe Hospital.

This research was conducted at Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City. The study took place from March to June 2025. The tools used in this study included a laptop, pen, notebook, and mobile phone. The instrument used by the researchers was a questionnaire distributed to nurses who used the clinical information system for nursing documentation in the ICU Room of Prof. Dr. H. Aloei Saboe Hospital. The total number of respondents was 40 people.

Data Analysis Techniques

After the data were collected, the researchers analyzed the data obtained using the appropriate analytical formula (Dongoes, 2020). Data processing was carried out using the SPSS statistical software, and the results were presented in the form of frequency distributions for each variable studied.

RESULTS

Univariate Analysis

Table 1. Univariate Analysis of the Clinical Application Information System

Khanza Application Information System	Frequency (n)	Present(%)
Return	31	77,5%
Back to Basics	9	22,5%
Total	**40**	**100%**

Source: Data, 2025

A sample analysis in Table 4.2 shows that out of 40 respondents, 31 respondents (77.5%) were categorized as having good utilization of the information system, while 9 respondents (22.5%) were categorized as having poor utilization.

Univariate Analysis of Nursing Care Documentation in the ICU Ward of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City

Table 2. Univariate Analysis of Nursing Care Documentation

Nursing Care Documentation	Frequency (n)	Present(%)
Lengkalp	31	77,5%
Don't Be Fooled By Your Boyfriend	9	22,5%
Total	**40**	**100%**

Based on Table 2, out of 40 respondents, 31 respondents (77.5%) had complete nursing care documentation, while 9 respondents (22.5%) had incomplete nursing care documentation.

Bivariate Analysis

Bivariate Analysis of the Effectiveness of the Clinical Application Information System on Nursing Care Documentation in the ICU Room of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City

Table 3. Analysis of the Effectiveness of the Clinical Application Information System on Nursing Care Documentation

Khanza Application Information System	**Nursing care documentation**				**Total**		***P value***
	Lengkalp		Don't Be Fooled By Your Boyfriend				
	N	**%**	**N**	**%**	**N**	**%**	
Return	29	72,5%	2	5,0%	31	77,5%	**<0.001**
Back to Basics	2	5,0%	7	17,5%	9	22,5%	
Total	**31**	**77,5 %**	**9**	**22,5%**	**40**	**100%**	

Source: Data, 2025

Based on the data presented in the table, the results show a relationship between the use of the clinical application information system and the completeness of nursing care documentation. Of the 31 nurses who were categorized as good users of the clinical application information system, 29 nurses (72.5%) had complete nursing care documentation, while 2 nurses (5%) had incomplete documentation. Meanwhile, among the 9 nurses categorized as poor users of the information system, only 2 nurses (5%) had complete documentation, whereas 7 nurses (17.5%) had incomplete documentation.

The table also shows that the p-value obtained from the Fisher's Exact test was <0.001. This indicates a statistically significant relationship between the use of the clinical application information system and the completeness of nursing care documentation (p-value < 0.05). Thus, it can be concluded that the Clinical Application Information System is effective in supporting the documentation of nursing care in the ICU Ward of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City.

DISCUSSION

Univariate Analysis of the Clinical Application Information System in the ICU Room of Prof. Dr. H. Aloei Saboe Hospital, Gorontalo City

The results showed that the majority of nurses were categorized as good users of the clinical application information system, with 31 respondents (77.5%). This indicates that most nurses have utilized the system optimally. The effective use of the information system plays an important role in improving the quality of documentation, particularly in the ICU setting, which requires rapid, accurate, and complete documentation of patient conditions.

The clinical information system supports clinical decision-making, enhances work efficiency, and minimizes the risk of delays in patient care. Accurate and complete documentation is crucial for ensuring continuity of care, evaluating patient progress, and improving patient safety.

According to Potter & Perry (2020), proper nursing documentation must meet the principles of accuracy, completeness, timeliness, and accessibility. An integrated information system supports these principles by providing accurate, traceable, and easily monitored data.

The researchers concluded that the use of the Khanzal application information system in the ICU helps nurses perform nursing documentation more systematically. This indicates that the information system contributes positively to improving the quality of nursing documentation.

In this study, it was found that 9 respondents (22.5%) were in the poor category regarding the use of the information system. This was influenced by several factors, including lack of training, limited understanding of the system's features, varying levels of technological literacy, and a general sense of unpreparedness toward digital transition. Additionally, some nurses were not fully accustomed to operating the Khanzal system and required more time to adapt. These findings show that low user comprehension affects documentation quality. This is consistent with Widiarsih et al. (2021), who stated that inadequate technical

training is one of the major barriers to successful implementation of information systems in healthcare facilities.

Univariate Analysis of Nursing Care Documentation

The study showed that out of 40 respondents, 31 respondents (77.5%) produced complete nursing documentation, while 9 respondents (22.5%) had incomplete documentation. This indicates that most nurses documented according to the standards, although some still fell short.

Several factors contributed to this condition, one of which was limited understanding of the Khanzal application's features, preventing optimal use. For example, the internal referral feature for patient transfers to the ICU was supposed to be used within the system, yet many nurses continued to use manual methods such as paper-based transfer sheets. Another issue was internet connection instability, which caused delays in data entry.

In general, the Khanzal information system is sufficiently robust, covering assessment functions, evaluations, and the use of SDKI, SLKI, and SIKI standards. Although some items still need to be manually retrieved from other files due to incomplete automatic integration, the system greatly supports documentation. Nursing documentation is essential as it serves as written evidence of care, the basis for evaluation, and a legal record.

Bivariate Analysis of the Effectiveness of the Khanzal Information System

The Fisher Exact test produced a p-value of 0.001 (< 0.05), indicating a significant relationship between the effectiveness of the Khanzal information system and the completeness of nursing care documentation in the ICU of RSUD Prof. Dr. H. Aloei Saboe, Gorontalo.

The Khanzal system proved to offer convenience, speed, and efficiency in documentation. In addition to reducing paper usage, it enhances team coordination because patient data can be accessed in real-time by all healthcare providers. Integration with electronic medical records enables faster accessibility and reduces the risk of data loss.

These findings are in line with DeLone & McLean (2021), who state that system quality, information quality, and service quality influence users' intention to use the system and the benefits they perceive. However, 9 respondents were identified as users who still did not produce complete documentation. This was influenced by high workloads, limited time, insufficient system mastery, and internet issues. Some features, such as CPPT/SOAP, are not automatically integrated, requiring nurses to retrieve data from other documents.

The assessment features available in the Khanzal system are actually quite comprehensive, covering identity, health history, nursing history from admission, patient development, biopsychosocial condition, diagnosis, interventions, and evaluations in accordance with SDKI, SLKI, and SIKI. Nevertheless, optimizing these features requires more training and routine use.

CONCLUSION

Out of 40 respondents, 31 (77.5%) were categorized as good in the use of the Khanzal application information system. A total of 31 respondents (77.5%) produced complete nursing documentation, while 9 respondents (22.5%) had incomplete documentation. The Fisher Exact test result of p = 0.001 (< 0.05) indicates a significant relationship between the effectiveness of the Khanzal information system and the completeness of nursing documentation in the ICU of RSUD Prof. Dr. H. Aloei Saboe, Gorontalo.

RECOMMENDATIONS

For nurses, it is expected that they enhance their competence in using the Khanzal system through regular training and understand the importance of complete nursing documentation as a professional responsibility and as an effort to improve patient service quality.

For the hospital, the effectiveness of the system should be further improved through periodic technical training and continuous evaluation of the use of the Khanzal application among nursing staff.

For future researchers, it is recommended to explore other factors affecting system effectiveness, such as workload, user attitudes, organizational support, or network stability.

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