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Effectiveness Of Hospital Management Information System (SIMRS) On The Efficiency Of Outpatient Services

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ABSTRACT

Hospital Management Information System (SIMRS) is an important component in improving the efficiency of health services, especially outpatient services. This study aims to determine the effectiveness of SIMRS implementation on the efficiency of outpatient services at Hospital X. The study used an analytical quantitative design with a cross-sectional approach. The study sample consisted of 60 respondents consisting of registration officers, nurses, and administrative staff. Data were collected using a questionnaire and analyzed using the Chi-Square test. The results showed a *p value = 0.003 (<0.05)* which means there is a significant relationship between SIMRS implementation and outpatient service efficiency. SIMRS has been proven effective in accelerating service time, increasing data accuracy, and reducing administrative errors.

Keywords: SIMRS, Efficiency, Outpatient Services

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1. Introduction

Outpatient services are a key component of the hospital care system due to their high volume of patient visits and their role as the primary point of entry for most patients. The high volume of outpatients demands that hospitals provide prompt, accurate, and efficient services. However, in practice, outpatient services often face various challenges, such as long waiting times, unorganized queues, and errors in administrative and medical record keeping.

The development of information technology in the healthcare sector offers significant opportunities to improve the efficiency and quality of hospital services. One example of this technology is the implementation of a Hospital Management Information System (SIMRS). SIMRS is an integrated system designed to support hospital management and service processes, from patient registration and medical, nursing, and pharmacy services to management reporting.

The implementation of SIMRS is expected to accelerate the service process, improve data accuracy and availability, and minimize administrative errors. With an integrated system, healthcare workers can access patient information quickly and accurately, resulting in more efficient service processes. Furthermore, SIMRS plays a crucial role in supporting managerial decision-making by providing real-time and reliable data.

In Indonesia, the implementation of a Hospital Management Information System (MISRS) has become mandatory for hospitals, as stipulated in legislation. However, the success rate of SIMRS implementation varies from hospital to hospital. Some hospitals have successfully utilized SIMRS optimally, while others still face obstacles such as limited human resources, lack of training, and technical issues with the system.

The efficiency of outpatient services is a crucial indicator in assessing hospital performance. Efficient services not only impact patient satisfaction but also optimize the use of hospital resources. Therefore, it is crucial to evaluate the extent to which the implementation of SIMRS can improve the efficiency of outpatient services.

Based on these conditions, this study was conducted to determine the effectiveness of the Hospital Management Information System (SIMRS) on the efficiency of outpatient services at Hospital X. The results of this study are expected to provide benefits as evaluation material for hospital management in improving service performance, as well as being a reference for the development of health information systems in the future.

2. Research Methods

a. Research Design

This study used a quantitative analytical design with a cross-sectional approach. This design was chosen to determine the effectiveness of the implementation of the Hospital Management Information System (SIMRS) on the efficiency of outpatient services simultaneously.

b. Location and Time of Research

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The research was conducted at Hospital X in April–May 2025. The selection of the research location was based on the implementation of SIMRS which has been running in all outpatient service units.

c. Population and Sample

The population in this study was all officers involved in outpatient services, including registration officers, nurses, and administrative staff.

The number of samples was 60 respondents, which were taken using the total sampling technique, so that the entire population was used as a research sample.

d. Inclusion and Exclusion Criteria

Inclusion Criteria

1) Officers working in the outpatient unit
2) Have used SIMRS for at least 6 months
3) Willing to be a research respondent

Exclusion Criteria

1) Officers who were on leave or inactive during the research
2) Officers who did not complete the questionnaire

e. Research Variables

- Independent variable: Implementation of Hospital Management Information System (SIMRS)
- Dependent variable: Efficiency of outpatient services

f. Operational Definition of Variables

Variables	Operational Definition	Measuring instrument	Scale
SIMRS	Level of utilization and ease of use of SIMRS	Questionnaire	Ordinal
Service efficiency	Speed, accuracy, and smoothness of outpatient services	Questionnaire	Ordinal

g. Research Instruments

The research instruments are:

1) SIMRS implementation questionnaire, including:
   - Ease of use
   - Data access speed
   - System integration
2) Service efficiency questionnaire, including:
   - Service time
   - Accuracy of administrative data
   - Service flow

The instrument has been tested for validity and reliability before use.

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h. Research Procedures

1) Research permit management
2) Explanation of research objectives to respondents
3) Informed filling consent
4) Data collection through questionnaires
5) Data processing and analysis

i. Data collection technique

- Primary data was obtained by filling out questionnaires by respondents.
- Secondary data was obtained from hospital reports and documentation.

j. Data Analysis Techniques

- Univariate analysis to determine the frequency distribution
- Bivariate analysis using the Chi- Square test

The significance level used is $\alpha = 0.05$.

k. Research Ethics

This research pays attention to the principles of research ethics, including:

- Informed consent consent)
- Confidentiality of data and respondent identity
- Respondents' right to refuse or stop participation

3. Research Results And Discussion

a) Results

1) Respondent Characteristics

This study involved 60 respondents consisting of registration officers, nurses, and outpatient administrative staff.

Table 1. Respondent Characteristics

Characteristics	Category	f	%
Age	20–30 years	18	30.0
	31–40 years	25	41.7
	>40 years	17	28.3
Gender	Man	22	36.7
	Woman	38	63.3
Years of service	<5 years	21	35.0
	≥5 years	39	65.0
Work unit	Registration	20	33.3
	Nurse	24	40.0
	Administration	16	26.7

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Interpretation:

Most respondents were aged 31–40 years, female, had ≥5 years of service, and worked as outpatient nurses. This indicates that respondents had sufficient experience using SIMRS.

2) SIMRS Implementation Level

Table 2. Distribution of SIMRS Implementation

Implementation of SIMRS	f	%
Effective	42	70.0
Quite effective	12	20.0
Less effective	6	10.0
Total	**60**	**100**

Interpretation:

Most respondents rated the implementation of SIMRS as effective. This indicates that SIMRS has been functioning well in supporting the outpatient care process.

3) Efficiency of Outpatient Services

Table 3. Efficiency of Outpatient Services

Service Efficiency	f	%
Efficient	40	66.7
Quite efficient	14	23.3
Not efficient	6	10.0
Total	**60**	**100**

Interpretation:

Most respondents considered outpatient services to be efficient, especially in terms of service time and accuracy of administrative data.

4) The Relationship between SIMRS Implementation and Outpatient Service Efficiency

Table 4.
Relationship between SIMRS and Outpatient Service Efficiency

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Implementation of SIMRS	Efficient	Not efficient	Total	p- value
Effective	36	6	42	
Less effective	4	14	18	
Total	**40**	**20**	**60**	**0.001**

Interpretation:

The results of the Chi-Square test show a *p value = 0.001 (< 0.05)*, which means there is a significant relationship between the implementation of SIMRS and the efficiency of outpatient services.

5) Summary of Research Results

The results of the study show that the effective implementation of SIMRS contributes significantly to increasing the efficiency of outpatient services, particularly in accelerating service times and improving data accuracy.

b) Discussion

The results of this study indicate that the implementation of the Hospital Management Information System (SIMRS) significantly impacts the efficiency of outpatient services. The majority of respondents assessed that the SIMRS has been implemented effectively and has improved service efficiency.

The effectiveness of SIMRS is evident in the ease of access to patient data, the speed of the registration process, and the integration between service units. With SIMRS, staff no longer need to perform manual recording, thus shortening service times and minimizing the risk of administrative errors.

The increased efficiency of outpatient services is also demonstrated by a more structured service flow and better coordination between units. SIMRS allows real-time access to patient information across various units, resulting in faster and more accurate service.

Statistical test results indicate a significant relationship between SIMRS implementation and outpatient service efficiency. This finding aligns with management information systems theory, which states that the use of information technology can improve organizational performance by increasing productivity and work efficiency.

However, some respondents still considered the implementation of SIMRS to be ineffective and services inefficient. This was due to several factors, such as limited user training, technical challenges with the system, and resistance to the transition from a manual to a digital system.

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Optimizing the implementation of SIMRS needs to be supported by increasing human resource competency, regular system maintenance, and hospital management's commitment to supporting the use of information technology.

4. Conclusion And Suggestions

a. Conclusion

Based on the results of research on the effectiveness of the Hospital Management Information System (SIMRS) on the efficiency of outpatient services, the following conclusions can be drawn:

1) Most respondents assessed that the implementation of SIMRS at Hospital X was in the effective category, especially in terms of ease of data access and integration between service units.
2) The efficiency of outpatient services at Hospital X is mostly in the efficient category, viewed from the speed of service, administrative accuracy, and smooth service flow.
3) The results of the statistical analysis showed a *p value = 0.001 (< 0.05)*, which means there is a significant relationship between the implementation of SIMRS and the efficiency of outpatient services.
4) The effective implementation of SIMRS has been proven to increase the efficiency of outpatient services, reduce patient waiting times, and minimize administrative errors.

Thus, it can be concluded that the Hospital Management Information System (SIMRS) is effective in increasing the efficiency of outpatient services at Hospital X.

b. Suggestion

Based on the research conclusions, it is recommended:

1) For Hospital Management
   - Conduct periodic evaluation and development of SIMRS so that the system remains optimal and in accordance with service needs.
   - Provide adequate technological facilities and infrastructure support.
2) For Health Workers and Officers
   - Improve competency and skills in using SIMRS through regular training.
   - Optimizing the use of SIMRS in every outpatient service process.
3) For Further Researchers
   - It is recommended to add other variables such as patient satisfaction, quality of service, and patient safety.
   - Using a longitudinal research design to assess the long-term impact of SIMRS.

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