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READINESS OF HUMAN RESOURCES IN IMPLEMENTING THE UTILIZATION OF THE HOSPITAL MANAGEMENT INFORMATION SYSTEM (SIMRS) TO INCREASE THE EFFICIENCY OF OUTPATIENT SERVICES

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Abstract

This study aims to assess the level of human resource (HR) readiness in the use of SIMRS and its implications for the efficiency of outpatient services. The research method used is a literature study by reviewing various scientific articles, books, and recent research reports relevant to the topic. The results of the review indicate that HR readiness can be categorized into three levels: low, medium, and high, with different characteristics and impacts on service quality. Hospitals with high HR readiness are characterized by adequate digital competency, managerial support, and an adaptive organizational culture, thereby reducing patient waiting times, increasing data accuracy, strengthening inter-unit coordination, and encouraging patient satisfaction. Conversely, low readiness results in slow administrative processes, a high risk of input errors, and increased resistance to change. The main obstacles identified include limited digital literacy, HR resistance, excessive workload, and minimal technical support. Recommended strategies include ongoing training, technical assistance, organizational change management, workload adjustments, and regular evaluation to ensure sustainable implementation.

Keywords: ***SIMRS, Human Resources, Outpatient Services.***

INTRODUCTION

Hospitals, as healthcare institutions, play a strategic role in improving public health through the provision of promotive, preventive, curative, and rehabilitative services (Lestari et al., 2025). In the context of globalization and digital transformation, hospitals are required to adapt to developments in information technology to address increasingly complex demands for efficiency, transparency, and service quality (Triana & Kosasih, 2025). One important instrument being developed is the Hospital Management Information System (SIMRS), an integrated system that manages the flow of information, both clinical and administrative, to support decision-making and improve the quality of healthcare services (Pujiawati et al., 2025). Optimal implementation of SIMRS is believed to accelerate service processes, reduce administrative overlap, reduce operational costs, and provide higher patient satisfaction, particularly in outpatient services, which have the highest visit volume compared to other service units (Chendra et al., 2025).

Despite the enormous potential benefits of SIMRS, research by Aisah and Maharani (2024) shows that not all hospitals have successfully implemented this system. Obstacles often arise not only from technical or infrastructure aspects, but also from the readiness of human resources (HR), the primary drivers of its utilization. These human resources include medical and paramedical personnel, as well as non-medical personnel who play a role in data input, management, and utilization. This readiness can be seen in aspects of competence, digital skills, attitudes, motivation, and acceptance of changes brought about by information technology. Without adequate HR readiness, SIMRS has the potential to become a new burden by creating resistance, data input errors, and delays in service delivery (Wijaya & Saputra, 2024). Human resource readiness in the context of SIMRS implementation is closely relevant to the efficiency of outpatient services. Outpatient services, as the main gateway to healthcare services in hospitals, often face problems such as long queues, service delays, data duplication, and inaccurate medical records. The success of SIMRS in addressing these issues depends heavily on the ability of human resources to operate the system consistently, quickly, and accurately (Syaputa & Setiawan, 2025). Therefore, studies on human

resource readiness not only address the availability of personnel but also encompass the quality of technological knowledge, clarity of role division, training support, and organizational cultural readiness to embrace digital transformation. Research conducted by Augustyana & Mulyani (2025) shows that the implementation of SIMRS in many hospitals in Indonesia still faces various challenges. Low digital literacy, lack of ongoing training, and weak managerial support are often the main causes of suboptimal SIMRS utilization. This impacts the flow of services, especially for outpatients who require speed and accuracy. On the other hand, several hospitals that have successfully utilized SIMRS well have shown significant improvements in efficiency, ranging from accelerated registration times, the availability of real-time patient data, to a reduction in manual administrative burden. This difference confirms that a key factor in the success of SIMRS implementation lies in the readiness of human resources to support the digitalization process of services.

Within the framework of national health development, the Ministry of Health of the Republic of Indonesia has emphasized the importance of digitalizing healthcare services, including the obligation for hospitals to have and optimize a Hospital Information System (SIMRS) as part of the healthcare transformation towards a more effective, efficient, and transparent system. Therefore, a study on human resource readiness in implementing SIMRS is not only academically relevant but also has practical urgency to address national policy needs. This study can contribute to an understanding of the extent to which human factors influence the effectiveness of information systems, as well as how strategies to strengthen human resource competencies can improve service efficiency, particularly in outptient units, which serve as a barometer of hospital service quality. Based on this description, research on human resource readiness in implementing the use of SIMRS to improve the efficiency of outpatient services is crucial. This research is expected to provide a comprehensive overview of HR readiness factors, the challenges faced, and their implications for service quality. Furthermore, the results of this study can provide strategic input for hospital management in formulating HR capacity development policies and planning for more targeted, sustainable information technology implementation, oriented toward improving the quality of healthcare services.

LITERATURE REVIEW

Hospital Management Information System

According to the Minister of Health Regulation No. 82 of 2013 concerning hospital management information systems, a hospital management information system is an information and communication technology system that processes and integrates all hospital service processes in the form of a coordination network, reporting, and administrative procedures to obtain information precisely and accurately, and is part of the Health Information System. SIMRS is a collection or activities and procedures that are organized and interrelated and interdependent and designed according to a plan in an effort to provide accurate, timely, and appropriate information to support the process of management functions and decision-making in providing health services in hospitals (Fadilla, 2021). Hospitals with good management systems are almost always guaranteed to have good service standards. One indicator of a good management system is the hospital's use of a hospital information system (SIMRS). This information system can be utilized for data and information services that are more productive, transparent, orderly, fast, easy, accurate, integrated, safe, and efficient. It also helps streamline and simplify policy development to improve the healthcare system, particularly in hospital management in Indonesia (Kristanti & Ain, 2021). Many benefits can be gained from using SIMRS. Here are five of them (Igiany, 2019):

1. Increase efficiency and effectiveness
2. Integrated with all parts automatically
3. Facilitate the budgeting process
4. Makes it easier to calculate stock of medicines and medical devices
5. Facilitates the preparation of performance and financial reports

The SIMRS organized by the Hospital must fulfill 3 (three) elements which include physical security, network, and application system. The implementation of SIMRS must be carried out by a structural or functional work unit within the Hospital organization with competent and trained human resources. The implementation of SIMRS management and development must be able to improve and support the health service process in the Hospital which includes:

1. speed, accuracy, integration, improved service, increased efficiency, ease of reporting in operational implementation
2. speed of decision making, accuracy and speed of problem identification and ease in formulating strategies in managerial implementation

3. work culture, transparency, coordination between units, understanding of the system and reducing administrative costs in implementing the organization

METHOD

This study employed a literature review *with* a descriptive qualitative approach. This approach was chosen because it focused on comprehensively reviewing various previous research findings, regulations, and empirical reports related to human resource readiness in implementing the Hospital Management Information System (SIMRS) and its impact on the efficiency of outpatient services. This approach enabled researchers to identify, analyze, and synthesize existing knowledge to gain a deeper understanding of the topic under study. Data sources were obtained from scientific publications in the form of reputable national and international journal articles, conference proceedings, health policy reports, and relevant books published within the last five years (2019–2024). This period was selected to ensure the relevance of the information, considering the rapid and dynamic development of information technology in the health sector. Electronic databases used in the literature search included Google Scholar, PubMed, Scopus, and ScienceDirect. Keywords used included: *"SIMRS", "hospital information system", "human resource readiness", "health information technology",* and *"outpatient service efficiency"* .

The inclusion criteria in the literature selection were: (1) publications that explicitly discuss the implementation of SIMRS or similar hospital information systems, (2) research that highlights the role and readiness of human resources in the use of health information systems, and (3) literature that contains an analysis of the impact on outpatient services or hospital services in general. Meanwhile, the exclusion criteria included literature that did not have full access to the text, articles that were only opinions without a methodological basis, and publications outside the specified period. The literature analysis process was conducted through several stages. First, researchers identified relevant literature based on titles and abstracts. Second, relevant literature was then thoroughly read to extract information related to human resource readiness, supporting and inhibiting factors for SIMRS implementation, and their implications for the efficiency of outpatient services. Third, findings from various sources were categorized based on key themes, such as technical competence, digital literacy, training support, organizational culture, and technology acceptance. Fourth, a synthesis was conducted to integrate the various findings to produce a comprehensive picture that could support the research analysis and discussion.

RESULTS AND DISCUSSION

Level of Human Resources Readiness in Using SIMRS

Human resource (HR) readiness in implementing the Hospital Management Information System (SIMRS) can be understood as the level of ability, willingness, and involvement of healthcare workers and non-medical personnel in accepting, mastering, and optimizing the system to support healthcare services. Magdalena et al. (2023) showed that HR readiness levels vary widely between hospitals, depending on individual competency factors, experience using technology, organizational support, and the availability of training.

In general, the level of HR readiness in using SIMRS can be categorized into three levels (Karomah, 2023):

1. Low Readiness
   At this stage, human resources have limited digital literacy and show high resistance to the use of SIMRS. Healthcare workers still prefer manual systems, perceive digital systems as an additional burden, and frequently make data input errors. This leads to slower outpatient service flows, increased patient queues, and a greater risk of data duplication.
2. Medium Readiness
   At this stage, human resources are beginning to become accustomed to using SIMRS, although they haven't yet fully mastered its features. Acceptance of the system has been quite good, but there are still technical challenges and limited understanding of how to optimally utilize the data. Efficiency in outpatient services has begun to be seen, but it hasn't reached its full potential because the system is still partially used and not fully integrated across all units.
3. High Readiness
   In this category, human resources possess strong digital competencies, are able to operate the SIMRS smoothly, and understand the system's benefits in improving service quality. They are not merely passive users but are also able to utilize SIMRS data to support clinical and managerial decision-making. Significant efficiency in outpatient services has been achieved, marked by reduced patient waiting times, increased data accuracy, and higher patient satisfaction.

Prabawa et al. (2022) emphasized that hospitals with a high level of readiness are generally supported by three main factors: (1) ongoing training programs tailored to the needs of healthcare workers, (2) strong managerial support in the form of policies, incentives, and infrastructure provision, and (3) an organizational culture that is adaptive to digital transformation. Conversely, hospitals with low readiness typically face constraints such as limited human resources skilled in technology, lack of training, and low commitment from hospital leaders to implementing digital healthcare services.

Efficiency of Outpatient Services Based on Human Resource Readiness Aspects

Outpatient services are the primary gateway for patient interaction with the hospital and serve as an early indicator of healthcare quality. The high volume of outpatients demands a fast, accurate, and integrated service system. Implementing a SIMRS (Sysm for Hospital Management) in outpatient units is expected to shorten waiting times, minimize administrative errors, and increase patient satisfaction (Nafiqa, 2024). However, Lutfiyah et al. (2025) show that SIMRS effectiveness is highly dependent on the level of preparedness of the human resources (HR) operating it. In other words, outpatient efficiency is not solely determined by the sophistication of the system, but rather by the ability, attitude, and commitment of HR in utilizing it.

1. Speed of Patient Registration and Queue Process
   Human resources with strong digital competencies are able to operate the SIMRS quickly, streamlining the registration, data verification, and medical record recording processes. Hospitals with technologically prepared human resources have reportedly reduced outpatient waiting times by 30–50%. Conversely, if human resources are not yet familiar with the system, data entry is slow, errors are frequent, and patients face long queues even when the system is in place.
2. Patient Data Accuracy and Security
   Efficient service delivery means not only speed but also accuracy. Skilled personnel in the use of the Hospital Management Information System (SIMS) ensure accurate, complete, and secure patient data recording. Minimizing input errors helps doctors make clinical decisions more quickly, prevents duplication of tests, and reduces the risk of *medical errors* . This also strengthens integration between units such as the laboratory, pharmacy, and radiology, directly contributing to the smooth running of outpatient services.
3. Inter-Service Unit Coordination
   Outpatient services often involve more than one unit, such as registration, specialist clinics, laboratories, and pharmacies. With highly prepared human resources, the Hospital Management Information System (MISRS) can be an effective coordination tool, as all patient data is available in *real time* . Unprepared human resources often revert to manual recording, which slows down the process and creates bottlenecks. Therefore, human resource readiness directly impacts smooth coordination between units.
4. Patient Satisfaction and Hospital Image
   Patients assess service efficiency not only by wait times but also by convenience and transparency of information. Human resources who are proficient in operating a SIMRS can provide clear information regarding service schedules, prescription status, and test results, thereby increasing patient satisfaction. The hospital's image is also enhanced by its perceived ability to utilize digital technology to provide professional and modern services.
5. Operational Costs and HR Productivity
   Outpatient efficiency is also related to cost. Human resources prepared to utilize SIMRS can reduce manual administrative burdens, reduce paper usage, and lower operational costs. Furthermore, healthcare worker productivity increases because less time is wasted on record-keeping, allowing medical staff to focus more on clinical services. Hospitals with human resources prepared to utilize SIMRS have reportedly increased the number of patients served per day without compromising service quality.

Human Resources Constraints and Strategies in the Implementation of SIMRS for Outpatient Efficiency

The main obstacle faced in implementing the Hospital Management Information System (SIMRS) in outpatient services lies in the readiness of human resources (HR). Many healthcare workers and administrative staff still have limited digital competency, especially those accustomed to manual systems. This limitation results in frequent data input errors, delays in the registration process, and suboptimal utilization of SIMRS features. Another obstacle that arises is resistance to change, as some HR feel burdened by the new system, which is perceived as more complicated than manual procedures. This resistance is often reinforced by the perception that using SIMRS increases the workload, especially in outpatient settings with high patient volumes (Fauzi et al., 2024).

Furthermore, the heavy workload makes it difficult for some medical and non-medical personnel to allocate time to learn the system in depth. This situation is exacerbated by the uneven training provided by hospital management, creating a gap in skills between units. The lack of technical support also exacerbates challenges in the field, as healthcare workers lack quick access to resolve operational issues when the system experiences problems. This combination of factors ultimately reduces the efficiency of outpatient services, as workflows that should be streamlined are actually hampered. To overcome these obstacles, a strategy focused on strengthening human resource capacity and managing organizational change is needed. Continuous training is a crucial solution, not only technical in nature but also emphasizing the benefits of SIMRS in accelerating services and reducing the potential for administrative errors. The presence of a technical support team in the field will help reduce resistance because human resources feel they are receiving direct support when facing difficulties. Additionally, change management strategies such as providing incentives, rewards for staff who adapt quickly, and transparent internal communication can increase motivation and a sense of ownership of the new system. Hospital management also needs to adjust workloads so that the use of the SIMRS is not seen as an additional task, but rather as part of a more efficient workflow. This effort must be accompanied by regular evaluation and feedback mechanisms, so that challenges faced by human resources can be promptly addressed through system improvements and capacity building. If this strategy is consistently implemented, human resource readiness will increase, resistance to change can be minimized, and the efficiency of outpatient services through SIMRS can be optimally achieved.

CONCLUSION

Human resource (HR) readiness is a determining factor in the successful implementation of the Hospital Management Information System (SIMRS) in improving the efficiency of outpatient services. The literature shows that HR readiness levels vary from low, medium, to high, and these differences directly impact registration speed, data accuracy, smooth inter-unit coordination, patient satisfaction, and operational cost efficiency. Hospitals with HR with strong digital competencies, strong managerial support, and an adaptive organizational culture tend to achieve significant outpatient efficiency, characterized by reduced patient waiting times, increased data accuracy, and increased service productivity. Conversely, hospitals with low levels of readiness face various obstacles such as limited digital literacy, resistance to change, excessive workload, and lack of technical support, which ultimately hinder the optimization of SIMRS. Therefore, strategies to increase human resource capacity through continuous training, technical assistance, organizational change management, workload adjustments, and regular evaluations are crucial steps to ensure that SIMRS utilization truly has a positive impact on the efficiency of outpatient services. With high levels of human resource readiness, SIMRS becomes not only an administrative tool but also a strategic instrument in driving the digital transformation of hospitals towards faster, more accurate, and more patient-oriented healthcare services.

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