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Analysis of Readiness for the Implementation of HMIS Khanza in Sultan Imanuddin Pangkalan Bun Hospital

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ABSTRACT

Background: Information technology has become an important part in various aspects of life, including in the health sector. In health service facilities, information technology is useful for facilitating complex health data management processes.

Purpose: This research was conducted to explore the readiness to implement HMIS KHANZA at Sultan Imanuddin Pangkalan Bun Regional Hospital**.**

Methods: The research was conducted qualitatively with a case study approach. The informants of this research were the heads of inpatient rooms totaling 13 people. This study examines four themes including content (what has changed), process (how to implement change), context (the environment in which change occurs), Individual (characteristics of individuals who are asked to change).

Results: The implementation of HMIS at Sultan Imanuddin Pangkalan Bun Hospital has had a positive impact by increasing operational efficiency, benefits for patients, and structured data management for performance analysis. Although initial adaptation may be difficult, full support from health personnel and management, training, and overcoming technical and psychological challenges are key to successful HMIS implementation.

Conclusion: The implementation of HMIS has shown a positive contribution to improving hospital operational efficiency, inter-departmental coordination, and the quality of patient services.

Keywords: hospital management information system, management system, readiness

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BACKGROUND

Information technology has become an important part in various aspects of life, including in the health sector. In health service facilities, information technology is useful for facilitating complex health data management processes. Information technology can help in the process of collecting, processing and presenting data (Ningsih, 2019). An information system is a tool or facility that aims to process data into information that can be used by decision makers quickly and precisely (Hidayat, 2013). In Minister of Health Regulation Number 82 of 2013 concerning Hospital Management Information Systems, in this regulation every hospital is obliged to organize a Hospital Management Information System (HMIS).

It is emphasized that the management and development of HMIS must also be able to improve and support the health service process in hospitals which includes speed, accuracy, integration, improved services, increased efficiency, ease of reporting in the implementation of reporting. HMIS is able to increase the speed of decision making, accuracy and speed of problem identification and ease in formulating strategies in managerial implementation. HMIS is able to improve work culture, transparency, coordination between units, system understanding and reduce administrative costs in organizational implementation (Ministry of Health of the Republic of Indonesia, 2013).

Currently, Sultan Imanuddin Pangkalan Bun Hospital uses manual medical records, so the processing of health information is also manual. The implementation of a manual system has weaknesses, such as taking a long time to process it into information and accuracy is also less acceptable because there is the potential for errors to occur (Ningsih, 2019). In an effort to improve performance and support the health service process, Sultan Imanuddin Pangkalan Bun Hospital plans to hold HMIS which is based on Electronic Medical Records (RME). RME-based HMIS can help improve services if designed well, but can also worsen services if not prepared properly.

It is important to be prepared to implement electronic medical records so that the application can run optimally and not cause problems in the future. In general, the implementation of RME still experiences several obstacles, such as in other hospitals that have implemented HMIS with RME development but have not utilized it optimally because there is no clear planning (Pratama, 2017).

Holt, Armenakis, Feild & Harris (2007) define individual readiness to change as a comprehensive attitude that is simultaneously influenced by content (what is changing), process (how change is implemented), context (the environment in which change occurs), and individuals (individual characteristics who are asked to change) who are involved in a change. Individual readiness for change collectively reflects the extent to which an individual or group of individuals is inclined to approve, accept, and adopt specific plans aimed at changing current circumstances.

Hanpachern, Morgan & Griego (1998) stated that readiness to change is the extent to which employees are mentally, psychologically or physically ready to participate in organizational development activities. Mainly refers to conditions where employees will have a high score on support and participation in change.

Berneth (2014) explains that readiness is more than understanding change, readiness is more than belief in change, readiness is a collection of thoughts and intentions for a specific change effort. Backer (2015) also stated that employee readiness to change involves employee beliefs, attitudes and intentions regarding the extent of change needed and employee perceptions and organizational capacity to carry out these changes successfully.

Employees who are ready to change will believe that the organization will experience progress if the organization makes changes, besides that they have a positive attitude towards

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organizational change and have the desire to be involved in implementing organizational change (Armenakis, Harris & Mossholder, 1993). On the other hand, if employees are not ready to change, then they will not be able to keep up and feel overwhelmed by the speed of organizational change that is occurring (Hanpacern et al, 2018).

Readiness to change is a comprehensive attitude that is simultaneously influenced by content, process, context and individual characteristics; reflects the degree to which an individual or group of individuals is inclined to approve, accept, and adopt specific plans aimed at changing current circumstances. Sultan Imanuddin Pangkalan Bun Regional Hospital plans to implement RME-based HMIS. However, to date no assessment has been carried out on the level of readiness to implement RME. Where, the success of implementing RME-based HMIS cannot be separated from good readiness. Until now it is not yet known whether human resources, leadership governance, organizational culture and existing infrastructure support the implementation of RME-based HMIS. Analysis of readiness to implement a new application system is very important because it is the main key to the success of implementing an information system. Based on the background above, researchers are interested in conducting research with the theme of analyzing the readiness to implement HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun.

OBJECTIVE

In general, this research was conducted to explore the readiness to implement HMIS KHANZA at Sultan Imanuddin Pangkalan Bun Regional Hospital.

METHODS

Research design is a strategy to achieve the research objectives that have been set and is used as a guide or guide for researchers throughout the research process. Judging from the type of data, the research approach used in this research is a qualitative approach. The design of this study is a qualitative study with an intrinsic case study approach. The subjects of the study were all heads of rooms at Sultan Imanuddin Hospital, Pangkalan Bun, totaling 24 informants. Using purposive sampling, 13 informants were obtained. With inclusion criteria including the Head of the inpatient room who has members in the room of more than 5 health workers. Exclusion criteria are the head of outpatient care, the head of the ICU room, and the head of the ICCU. Triangulation using source triangulation, namely the Deputy Director of Sultan Imanuddin Hospital, Pangkalan Bun.

RESULTS

Contents (What Changed) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

The use of HMIS has brought positive changes in hospitals. Operational efficiency increases, coordination between departments is better, and patients receive significant benefits. By continuing to develop and improve this system, hospitals can continue to improve the quality of the health services they provide. With HMIS, all data can be accessed and managed electronically, which allows the administration process to be faster and more accurate. This reduces the risk of human error and allows administrative staff to focus on other, more important tasks. Information can be shared in real-time between departments, such as laboratory test results, medical records, and drug prescriptions. This allows for better collaboration between doctors, nurses and other medical staff, and ensures that patients receive well-coordinated care. With data that is well documented and easily accessible through HMIS, hospital management can analyze operational performance, patient trends and treatment effectiveness.

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At first, health workers did not immediately accept the change in the use of HMIS, but gradually health workers began to get used to it and became more comfortable. Therefore, it is important to involve all employees in planning, decision making and use of HMIS.

Discussions, meetings and training will help understanding and awareness of the benefits of HMIS. Effective training covers the use of HMIS, its functionality, and its integration into each employee's duties. Responsive and continuous technical support is also important. Open and transparent communication about the progress, benefits and results of HMIS must be carried out regularly. Awards are given to employees who adapt and successfully use HMIS to increase their motivation.

Process (How Changes Are Implemented) in Implementing HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

Using HMIS reduces administrative work that is time consuming and prone to human error. Processes such as filling out forms, recording patient data, and schedule management can be done electronically, saving time and effort. With HMIS, employees can focus on more value-added tasks and increase their work efficiency. HMIS enables real-time access to critical information such as patient medical records, laboratory test results, and treatment schedules without having to search through various physical files or rely on direct communication with relevant departments. Patient information can be shared easily, providing a holistic understanding of the patient's condition. HMIS helps reduce communication failures or misunderstandings between hospital employees. The required information is available in the system and can be accessed by all related parties. HMIS provides well-documented and structured data, which can be used to analyze hospital performance, patient trends and treatment effectiveness.

Only authorized employees are given access to sensitive information, such as patient medical records. This setting ensures that only people who have the need and permission to access can view or change patient data, reducing the risk of misuse or unauthorized access. HMIS can be integrated with existing physical and digital security systems in hospitals. This includes the use of strong passwords, data encryption, firewalls, as well as double authentication mechanisms to ensure that patient data can only be accessed by authorized parties. HMIS records every access and activity that occurs to patient data. If a security breach occurs, appropriate action can be taken quickly. Activity tracking also helps in determining accountability and preventing misuse of data.

Context (Environment Where Changes Occur) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

All parties or health workers involved agree and support the use of HMIS (Hospital Management Information System). There is no objection or rejection to the use of HMIS, in fact it is considered a step that can advance and make work easier. Everyone welcomes the use of HMIS, although it may require certain adjustments or adaptations. In fact, all employees also appreciate the use or implementation of this new HMIS.

Even though HMIS Khanza has only been implemented at Sultan Imanuddin Pangkalan Bun Regional Hospital, the appearance and facilities provided are considered very complete. Although some officers felt confused by the number of features that had to be memorized, this was considered normal for a new program. Some problems that arise in the system are generally small problems that do not have a significant effect on the entire system. However, there needs to be evaluation and repair of bugs that may exist in the system. Overall, HMIS Khanza is considered sufficient.

Individual (Characteristics of Individuals Who Are Asked to Change) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

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By accepting change, employees will find it easier to adapt and make maximum use of the system. It is important for employees to have an open attitude and accept the changes presented by HMIS. Health employees must be committed to learning and gaining knowledge about HMIS. They can take part in training, read guidance materials, or collaborate with colleagues who are already familiar with using HMIS. HMIS will bring changes to employees' daily work processes. Employees need to be willing to adapt to new work processes that are integrated with HMIS. Employees can help and support each other in facing challenges that may arise during adjustment to HMIS. Implementing HMIS may cause fear or challenges for some employees. But they may feel anxious about technical difficulties, changes in work responsibilities, or the possibility of losing their job. It is important for employees to overcome these fears and challenges by seeking support from management, the technical team, or colleagues.

For some employees who are less experienced in using technology, they face difficulties in understanding the user interface, navigating the system, or using complex features. Employees also experience difficulty in changing old habits and mastering new procedures related to the use of HMIS. Employees may have concerns about the security of patient data when using HMIS. Implementing HMIS can influence the way employees communicate and collaborate. Some employees face difficulties adapting to new communication and collaboration tools, such as electronic messaging or task management systems. The organizational culture changes required to support the use of HMIS require significant time and effort.

DISCUSSION

Contents (What Changed) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

Implementing a hospital management information system (HMIS), there is several literature that can provide insight into the changes that usually occur in its implementation. Research by Fitriyani et al. (2018) observed the implementation of HMIS in hospitals and highlighted changes in administrative processes and medical documentation. HMIS implementation generally brings changes from manual processes to automation in recording patient data, schedule management and medical reporting.

In addition, research by Pratiwi et al. (2019) reviewed changes in the implementation of HMIS in the context of increasing efficiency and accuracy in patient data management and administration. The use of HMIS is able to integrate various aspects of hospital operations, such as patient registration, drug prescriptions, and examination schedules, thereby improving coordination between work units and providing more accurate information for related parties.

Research by Sutrisno et al. (2016) investigated the implementation of HMIS in hospitals and highlighted changes in administrative processes, patient management, and medical information management. HMIS implementation generally brings changes in the collection and storage of patient data, and allows faster and more accurate access to medical information.

Apart from that, research by Prabowo and Marbun (2018) looked at the impact of HMIS implementation in increasing the efficiency and accuracy of medical processes. This study shows that HMIS can reduce errors in administering medication, optimize examination schedules, and make it easier to manage patient medical records, which in turn can improve the quality of service.

According to researchers, the implementation of a hospital management information system (HMIS) has the potential to bring about significant changes in the management of administration and medical services in hospitals. The implementation of HMIS tends to shift manual processes to automatic ones, allowing for more efficient storage and access to patient

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information, as well as increasing accuracy in medical data management. The impact of this change also includes increased efficiency in administration, management of examination schedules, and coordination between hospital work units. However, this change also requires good understanding, training and readiness of all parties involved so that the implementation of HMIS can be successful.

The results of this study provide an overview of the potential benefits and challenges that may be faced in implementing HMIS in hospitals. This conclusion confirms that the implementation of HMIS can optimize administrative processes and medical services, but this implementation must also be followed by thorough preparation and commitment from all teams involved so that the goals of this change are achieved effectively and provide positive benefits for hospitals and patients.

Process (How Changes Are Implemented) in Implementing HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

Research conducted by Indriyani et al. (2019) observed the HMIS implementation process in hospitals and highlighted the stages that usually occur, such as needs analysis, system design, testing, and training. Implementing HMIS requires cross-disciplinary team collaboration, involving medical personnel and information technology.

In addition, research by Sitorus et al. (2018) reviewed the role of effective communication in the HMIS implementation process. This research emphasizes the importance of ensuring all parties involved have a clear understanding of the implementation objectives, benefits to be gained, and changes in work processes. Good communication can help overcome resistance to change and facilitate smoother adaptation to new systems.

Research by Cahyono et al. (2020) explored the HMIS implementation process in hospitals and highlighted the challenges and factors that influenced successful implementation. This study identified that the implementation process involves needs analysis, selection of appropriate systems, design, testing, training, and evaluation. Human, technological and organizational factors play an important role in the success of change.

In addition, research by Azis et al. (2017) discussed the important role of management in the HMIS implementation process. This study shows that management support, effective communication, and active participation from all parties involved are key factors in ensuring change runs smoothly. This research also emphasizes the need for careful planning and a good understanding of the goals and benefits of implementation.

According to researchers, the implementation of a hospital management information system (HMIS) is a complex process and involves various stages, such as needs analysis, system design, testing, and training. The results of this research underscore the important role of human factors, technology and management in the successful implementation of this change. Active support from management, effective communication, and participation of all parties involved are the main factors that influence the smooth and successful implementation of HMIS.

There is a need for a deep understanding of the goals and benefits of HMIS implementation, as well as recognition of changes in work processes that may occur. Literature sources show that the implementation of HMIS in hospitals can produce significant changes in the management of administration and medical services. However, successful implementation depends on a good understanding of the stages of change and readiness to face challenges that may arise. This conclusion emphasizes the importance of careful preparation, good communication, and the participation of all parties involved in ensuring that changes to HMIS run successfully and provide the expected benefits for hospitals and patients.

Context (Environment Where Changes Occur) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

The implementation of a hospital management information system (HMIS) in RSUD faces various contextual aspects that can influence these changes. Literature by Upadhaya et al. (2018) show that contextual aspects, such as organizational culture, organizational structure, and work environment, can influence acceptance and adaptation to HMIS. An environment that supports innovation and change will have a positive impact on implementation success.

Additionally, research by Nancarrow et al. (2013) highlighted the importance of understanding health system dynamics and regulations at the regional or national level in implementing HMIS. External factors such as regulations, policies and government support also influence the environment in which HMIS is implemented.

Research by Zhang et al. (2018) discussed contextual factors in the implementation of health technology, including HMIS. This study shows that organizational characteristics, culture, and policies have a significant influence on the acceptance and success of new technologies. An environment that supports innovation and has a culture that is open to change will be better able to integrate HMIS effectively.

Additionally, research by Zarei et al. (2015) observed contextual aspects in the implementation of HMIS in hospitals. The research results show that organizational factors, such as organizational structure, leadership, and communication between departments, can influence how change is received and adapted by the entire team. An environment that facilitates collaboration and has support from management will tend to achieve success in HMIS implementation.

According to researchers, contextual aspects play an important role in the implementation of hospital management information systems (HMIS). Various factors such as organizational characteristics, culture, structure, and regulations in the hospital environment can influence how changes are adopted and adapted by stakeholders. Management support, a culture of innovation, and collaboration between departments are key elements in successfully integrating HMIS.

In addition, the research results also show that the suitability between the changes proposed by HMIS and the organizational context will have an impact on better acceptance and use. An environment that supports innovation, communicates well, and has a flexible structure will be better able to deal with change and optimize the benefits offered by HMIS. Therefore, in implementing HMIS KHANZA at RSUD Sultan Imanuddin Pangkalan Bun or in other hospital environments, understanding the context and relevant contextual factors is very important to achieve success and better adoption of the new system.

Individual (Characteristics of Individuals Who Are Asked to Change) in the Implementation of HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun

In the context of implementing HMIS or other health information systems, individual characteristics such as technology skills, knowledge of the system, attitude towards change, and level of comfort in using technology are important factors that influence adoption and adaptation to change. A study by Venkatesh and Davis (2000) put forward the UTAUT (Unified Theory of Acceptance and Use of Technology) model which includes individual factors such as perception of usefulness, perceived ease of use, attitudes towards use, and intention to use technology. These factors play a role in predicting the acceptance and adoption of new technology, including the implementation of health information systems.

Research by Al-Somali et al. (2009) discussed individual factors in the adoption of information systems in organizational environments. This study shows that technology skills, perceptions of benefits, and support from management influence information technology

adoption. Individuals who have better technology skills and see the benefits of change are more likely to accept and use new systems.

Additionally, research by Gagnon et al. (2012) looked at individual characteristics in the implementation of health information systems in health care environments. This study highlights the importance of system knowledge, attitudes toward change, and technology skills as factors influencing acceptance and use of health information systems. This research also emphasizes the need for appropriate training to improve individual skills and knowledge.

According to researchers, individual characteristics play an important role in the adoption and adaptation of hospital management information systems (HMIS). The results of the study underscore the importance of technology skills, knowledge of systems, attitudes towards change, and perceptions of benefits in influencing the acceptance and use of information technology, including HMIS. Individuals who have good technology skills, have adequate knowledge of the system, and have a positive attitude toward change tend to be better prepared to adopt and use new systems.

Apart from that, the results of this research also emphasize the need for support from management and appropriate training to improve individual skills and knowledge in using HMIS or other health information systems. A holistic approach, which includes improving individual skills as well as support from management and an organizational environment conducive to innovation, will contribute to the successful implementation of HMIS. This conclusion underscores the importance of focusing on the individual in strategies for implementing health information technology in hospitals, so as to create more effective and integrated adoption.

CONCLUSION

1. The implementation of HMIS has had a positive impact by increasing operational efficiency, coordination between departments, and the benefits felt by patients. Continuous development can continue to improve service and operational analysis through faster and more accurate data access and management. Although initial adaptation may be difficult, involving healthcare professionals in planning and technical support has proven effective in ensuring successful use of HMIS.
2. Implementing HMIS provides significant benefits, including reduced administrative work, increased work efficiency, and structured data management for performance analysis. HMIS also offers tight data security and integration with physical and digital security systems. Thus, HMIS significantly improves patient data management, operational efficiency and information security.
3. Full acceptance and support for HMIS at RSUD Sultan Imanuddin Pangkalan Bun shows a step forward in health services. Even though adjustments are needed, HMIS Khanza is considered positive with complete facilities and needs regular evaluation and improvement.
4. The success of HMIS implementation depends on individual attitudes and skills in dealing with change. Management support, training, and handling technical and psychological challenges are key. Efforts to understand and overcome changes in organizational culture also need to be considered so that HMIS use is effective.

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contribution in improving the efficiency and quality of health services at Sultan Imanuddin Hospital.

CONFLICTS OF INTEREST

There are no relevant conflicts of interest that could affect the integrity or objectivity of research regarding the analysis of readiness to implement HMIS KHANZA at Sultan Imanuddin Hospital Pangkalan Bun. The authors and research team have no financial relationships or personal interests with HMIS KHANZA providers or other parties that could influence the results or interpretation of this study. This research was conducted with the aim of objectively analyzing the readiness to implement this system in hospitals and providing recommendations based on research findings.

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