

Integrating Hospital Information Systems and National Health Insurance: Impact on Employee Performance and Service Quality

*Integrating Hospital
Information Systems
and Health Insurance*

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ABSTRACT

Indonesia's healthcare system is undergoing a digital transformation through the integration of the Hospital Management Information System and the national health insurance platform. These systems aim to enhance operational efficiency and healthcare access but face challenges in specialized settings like military dental hospitals. This study examines the impact of integrating these systems on employee performance and service quality at the Dental and Oral Hospital of the Indonesian Navy R.E. Martadinata in Jakarta. Using a qualitative case study approach, data were gathered through literature reviews and institutional observations to identify operational and systemic barriers. The findings highlight issues such as limited digital literacy among staff, inconsistent system use, and administrative delays that hinder optimal service delivery and efficiency. These challenges are intensified by the unique operational context of military hospitals. The study concludes that improving the integration of these systems requires targeted staff training, robust digital infrastructure, and cohesive policy support to align technology with institutional needs and patient-centered care priorities, ultimately enhancing service quality and employee performance in specialized healthcare settings.

Keywords: BPJS, Employee Performance, Military Hospital, Service Quality, SIMRS.

ABSTRAK

Sistem pelayanan kesehatan Indonesia sedang mengalami transformasi digital melalui integrasi Sistem Informasi Manajemen Rumah Sakit dan platform jaminan kesehatan nasional. Sistem ini bertujuan untuk meningkatkan efisiensi operasional dan akses layanan kesehatan, tetapi menghadapi tantangan di lingkungan khusus seperti rumah sakit gigi militer. Studi ini mengkaji dampak integrasi sistem ini terhadap kinerja karyawan dan kualitas layanan di Rumah Sakit Gigi dan Mulut TNI AL R.E. Martadinata di Jakarta. Dengan menggunakan pendekatan studi kasus kualitatif, data dikumpulkan melalui tinjauan pustaka dan observasi kelembagaan untuk mengidentifikasi hambatan operasional dan sistemik. Temuan ini menyoroti isu-isu seperti terbatasnya literasi digital di kalangan staf, penggunaan sistem yang tidak konsisten, dan keterlambatan administratif yang menghambat penyampaian layanan dan efisiensi yang optimal. Tantangan-tantangan ini diperparah oleh konteks operasional rumah sakit militer yang unik. Studi ini menyimpulkan bahwa peningkatan integrasi sistem ini memerlukan pelatihan staf yang terarah, infrastruktur digital yang kuat, dan dukungan kebijakan yang kohesif untuk menyelaraskan teknologi dengan kebutuhan institusi dan prioritas perawatan yang berpusat pada pasien, yang

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INTRODUCTION

Indonesia's healthcare system is undergoing rapid transformation, marked by efforts to expand universal health coverage and digitalize service delivery. Central to this transformation are two major instruments: the Hospital Management Information System (*Sistem Informasi Manajemen Rumah Sakit/SIMRS*) and the national health insurance program known as BPJS Kesehatan. SIMRS aims to enhance administrative efficiency and integrate patient services, while Social Security Administrator (*Badan Penyelenggara Jaminan Sosial/BPJS*) provides financial access to healthcare through capitation and INA-CBG reimbursement mechanisms (Chang et al., 2012; Fadilla, 2021; Saputra & Prima, 2022). Together, these systems play a pivotal role in standardizing hospital services and improving patient access across Indonesia.

However, the successful implementation of SIMRS and BPJS is far from uniform. Hospitals often struggle with aligning digital infrastructure and national insurance regulations due to limited human resource capacity, uneven digital literacy, and bureaucratic inefficiencies (Fatima et al., 2018; Lenny & Kridanto, 2019; Pane et al., 2023). This challenge is especially pronounced in specialized or military health institutions like Dental and Oral Hospital (*Rumah Sakit Gigi dan Mulut/RSGM*) Ladokgi Indonesian national army (*Tentara Nasional Indonesia/TNI*) AL R.E. Martadinata, a prominent dental and oral hospital serving both military personnel and the general public. Despite possessing advanced facilities and a mandate for excellence, the hospital continues to face operational delays and service inconsistencies, pointing to a disconnect between policy objectives and ground-level execution (Gea & Harahap, 2022; Shalathiah & Saleh, 2025).

Numerous studies have analyzed the effects of SIMRS on communication efficiency, hospital productivity, and end-user satisfaction (Aggelidis & Chatzoglou, 2012; Khalifa & Alswailem, 2015; Kuo et al., 2018). Others have evaluated BPJS-related challenges such as claim management and administrative workload (Zulfikar et al., 2023; Lesmana & Taufik, 2023). However, few have explored how the simultaneous use of SIMRS and BPJS impacts employee performance and service quality in a military hospital setting. As administrative staff are the primary users of these systems, their familiarity, competence, and attitude toward technology play crucial roles in determining patient outcomes and satisfaction (Al-Okaily et al., 2021; Deng et al., 2022; Biantara & Mulyanti, 2023; Arafa et al., 2024).

Service quality itself is multifaceted, typically defined by five dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Swain & Kar, 2018; Tan et al., 2019; Padalia & Natsir, 2022). These elements depend not only on infrastructure but also on the readiness and motivation of employees to utilize digital tools effectively. Lee et al. (2012), Amin and Nasharuddin (2013) and Ramadhan and Fajarwati (2024), emphasize that high-performance work systems improve not just productivity but also patient loyalty and trust. However, gaps remain in the literature regarding how such systems perform under the dual pressures of digitalization and national policy mandates in specialized hospitals.

Several scholars have called for integrated evaluations of SIMRS and BPJS implementation to understand their impact on hospital competitiveness and patient-centered care (Meesala & Paul, 2018; Rahmantya et al., 2019; Novitasari, 2022). Yet existing frameworks tend to address these systems in isolation. The few integrated studies tend to focus on general hospitals, overlooking the unique organizational culture, staffing structure, and operational mandates of military or dental institutions (Livinus et al., 2021; Setiorini et al., 2021; Windari et al., 2023).

This study addresses this critical gap by focusing on RSGM Ladokgi TNI AL R.E. Martadinata. It aims to evaluate how the integration of SIMRS and BPJS services influences employee performance and service quality in a military hospital context. By doing so, it contributes new insights to the literature on healthcare digitalization, especially in hybrid institutions that balance civilian and military healthcare mandates. The findings are expected to inform policymakers and hospital administrators in improving system design, user training, and patient service standards in specialized healthcare environments.

LITERATURE REVIEW

Implementation of SIMRS in Healthcare Institutions

The implementation of SIMRS has become a strategic necessity for healthcare institutions seeking to improve service quality, administrative efficiency, and data management. SIMRS integrates multiple hospital operations, including patient registration, medical records, billing, pharmacy logistics, laboratory systems, and internal reporting, into a cohesive digital platform. Studies show that such integration leads to improved coordination, reduced redundancies, and better clinical decision-making (Chang et al., 2012; Mohammadpour et al., 2021).

Successful SIMRS implementation goes beyond technology, requiring leadership support, training, user acceptance, and strong IT infrastructure (Aggelidis & Chatzoglou, 2012; Kuo et al., 2018). Public and military hospitals like RSGM Ladokgi TNI AL face challenges such as resistance to change, uneven digital literacy, and limited budgets for system upgrades (Indrayati et al., 2021; Windari et al., 2023). User satisfaction is critical for SIMRS success, and the End-User Computing Satisfaction (EUCS) model helps assess key factors like system reliability, response time, accuracy, and usability (Aggelidis & Chatzoglou, 2012; Deng et al., 2022). Studies by Lenny and Kridanto (2019) and Rahman and Antu (2025) show that regular training, feedback, and user support enhance SIMRS efficiency and acceptance.

The alignment of SIMRS with national systems like BPJS is essential for improving claim accuracy and reimbursement timeliness (Kissi et al., 2020; Zulfikar et al., 2023; Gunawan, 2024). At RSGM Ladokgi TNI AL, SIMRS implementation supports efforts toward international service standards and Navy health infrastructure. However, studies by Setiorini et al. (2021) and Munjirin et al. (2024) highlight that SIMRS performance remains suboptimal without continuous monitoring and evaluation. These findings suggest that system success relies not only on design but also on organizational readiness, staff involvement, and policy integration. Therefore, a comprehensive approach involving technology, human resources, and institutional systems is crucial for improving service quality.

BPJS Health Services and Patient Access

The BPJS Kesehatan program, launched as part of Indonesia's Universal Health Coverage (UHC) policy, plays a transformative role in enhancing healthcare accessibility and affordability. Through mechanisms such as capitation and the Indonesia Case-Based Groups (INA-CBGs), BPJS regulates service delivery, influencing hospital administration, billing systems, and care standards (Saputra & Prima, 2022; Shalatiah & Saleh, 2025). However, this transformation is accompanied by complex challenges, particularly in specialized and military hospitals like RSGM Ladokgi, where dual responsibilities to TNI personnel and civilians demand flexible yet compliant operational strategies (Despont-Gros et al., 2005; Gea & Harahap, 2022).

Research indicates that the administrative burdens associated with BPJS including claim coding, e-claim processing, and reimbursement delays can impede frontline service delivery and reduce patient satisfaction (Zulfikar et al., 2023; Kristiawan et al., 2025). Staff performance and familiarity with BPJS guidelines are key determinants of service efficiency and waiting time management (Amin & Nasharuddin, 2013; Fatima et al., 2018). Consequently, the integration of SIMRS into BPJS workflows has become

essential to streamline verification, support claim accuracy, and automate reporting procedures (Pane et al., 2023; Muzaki et al., 2023; Gunawan, 2024).

The synergy between SIMRS and BPJS depends not only on technology but also on user readiness, training, and leadership support (Deng et al., 2022; Arifin et al., 2024). While digital integration can enhance efficiency, studies by Indrayati et al. (2021) and Widodo and Pertiwi (2024) note ongoing challenges in military and dental hospitals. Despite national mandates, inconsistent implementation remains (Livinus et al., 2021; Windari et al., 2023), highlighting the need for further research on best practices. Ensuring optimal BPJS-based access requires both policy adherence and effective, user-centered digital systems.

Service Quality and Employee Performance in Hospitals

Service quality in hospitals remains a cornerstone of patient satisfaction and trust in the healthcare system. It is commonly evaluated through five dimensions: tangibles (infrastructure and technology), reliability (service accuracy), responsiveness (timeliness), assurance (staff competence), and empathy (personalized care) (Swain & Kar, 2018; Tan et al., 2019). The role of hospital employees particularly administrative and support staff is vital, as their performance heavily influences perceptions of service quality, especially in high-volume or specialized environments (Amin & Nasharuddin, 2013; Asnawi et al., 2019).

In Indonesia, public hospitals frequently face barriers such as fragmented service systems, inadequate employee training, and bureaucratic overload, which collectively hinder service excellence (Aghazadeh et al., 2013; Rahmantya et al., 2019; Novitasari, 2022). The adoption of SIMRS and BPJS-related digital systems aims to alleviate such burdens by automating routine tasks and ensuring procedural accuracy (Gunawan, 2024; Kristiawan et al., 2025). However, without parallel investments in change management and digital literacy, these systems can inadvertently generate inefficiencies or employee frustration (Livinus et al., 2021; Arafa et al., 2024).

Studies have confirmed that employees who are well-versed in SIMRS and BPJS protocols are more likely to provide timely and responsive services, thereby enhancing patient experience and operational outcomes (Khalifa & Alswailem, 2015; Deng et al., 2022). This is particularly relevant in military hospitals such as RSGM Ladokgi, where organizational discipline must align with digital system workflows (Arifin et al., 2024). Furthermore, strong leadership and continuous performance evaluation are crucial to fostering a service-oriented culture (Chang et al., 2012; Lee et al., 2012).

RESEARCH METHOD

This study utilizes a qualitative descriptive approach to investigate the implementation of SIMRS and BPJS national health insurance in improving employee service quality at RSGM Ladokgi TNI AL R.E. Martadinata. This method was chosen to obtain a comprehensive and in-depth understanding of staff experiences, perceptions, and the operational challenges faced during the integration of digital systems with public healthcare services. By focusing on qualitative inquiry, the study explores the human and organizational aspects of service delivery, offering insights that are often missed in quantitative research. It allows for an exploration of real-world complexities, including staff adaptability, workflow changes, and the effectiveness of technology use in daily operations. The qualitative design is particularly suitable for understanding how institutional culture, policy compliance, and system usability interact in practice, making it ideal for evaluating digital transformation efforts in specialized healthcare environments such as military or dental hospitals.

Data collection was carried out using three primary techniques: direct observation, semi-structured interviews, and document analysis. The observation process was focused on daily hospital workflows, particularly in patient-facing services such as registration, claim processing, and interactions between staff and patients. Observations also included how employees utilize SIMRS and BPJS applications in routine operations. Semi-

structured interviews were conducted with selected informants including administrative officers, IT staff, and unit managers. These interviews aimed to capture in-depth perspectives on the system's functionality, perceived benefits, encountered obstacles, and staff adaptation strategies.

Additionally, a series of institutional documents were reviewed to support and validate the findings. These documents included standard operating procedures (SOPs), service flow diagrams, SIMRS user guides, BPJS claim reports, and patient service records. The triangulation of data from observations, interviews, and documents enhanced the credibility and reliability of the study. All qualitative data were analyzed using thematic analysis, which involved identifying, categorizing, and interpreting recurring patterns and themes related to system integration and service quality. This method provided a comprehensive, practice-based insight into the effectiveness and limitations of SIMRS and BPJS implementation, thereby contributing meaningful evidence for future system improvements in military healthcare settings.

RESULTS

Implementation of SIMRS and Impact on Employee Service Quality

The study findings indicate that the implementation of SIMRS at RSGM Ladokgi TNI AL R.E. Martadinata has positively impacted administrative efficiency, especially in areas such as patient registration, medical record management, and internal communication. Observations and interviews with administrative staff revealed that SIMRS has simplified daily workflows by reducing reliance on manual paperwork, minimizing the duplication of patient records, and allowing quicker access to information. One of the key benefits highlighted was the system's ability to provide real-time access to patient medical history, which significantly improved coordination between key service units, including registration, dental care, and the pharmacy. Staff reported that these improvements have not only saved time but also enhanced accuracy in data handling. The integration of digital systems like SIMRS has helped streamline administrative operations, contributing to a more organized, efficient, and responsive healthcare service environment, while also supporting the broader goals of hospital modernization and service quality enhancement.

However, the results also highlight several barriers. Some staff members reported difficulties in operating certain SIMRS features due to limited IT literacy and insufficient system training. In cases of system downtime, manual processes were still used as a backup, which disrupted the efficiency the system was meant to ensure. Additionally, some system modules such as patient billing and referral management were not yet fully integrated, resulting in inconsistent service delivery across units.

Despite these challenges, patients interviewed indicated shorter waiting times and clearer service procedures compared to earlier periods. The hospital management acknowledged the need for continuous SIMRS evaluation and user training. SIMRS has improved internal service flow and supported better communication among employees, although optimization is still needed in terms of user readiness and system integration.

Effectiveness of BPJS Services in Enhancing Patient Satisfaction

The study found that BPJS service implementation at RSGM Ladokgi TNI AL R.E. Martadinata has significantly improved access to healthcare for patients, particularly those from middle-to-lower income groups. BPJS procedures have enabled patients to receive services without paying upfront costs, increasing their satisfaction and trust in the system. According to interviews, both patients and staff appreciated the structured and standardized service flow mandated by BPJS regulations.

However, the research also revealed areas of concern. Administrative employees often experienced difficulties related to BPJS claim submissions and system-based verifications, which sometimes delayed services. Staff reported that BPJS regulations frequently changed, requiring constant adaptation and retraining. Moreover, incomplete

documentation by patients often caused claim rejections or processing delays, increasing the administrative burden on employees.

Observations indicated that while the integration of SIMRS helped streamline the BPJS patient queue at RSGM Ladokgi TNI AL R.E. Martadinata, service bottlenecks still occurred during peak hours. Some patients expressed frustration due to long wait times and unclear communication regarding the required BPJS documentation. Despite these issues, most respondents felt that the overall process was more structured and efficient compared to private, non-BPJS services. The integration of BPJS services, although not without challenges, has laid the groundwork for more inclusive and organized healthcare delivery. Importantly, improvements in employee performance and patient satisfaction were observed when staff demonstrated a clear understanding of BPJS procedures and when the SIMRS system effectively supported administrative tasks related to BPJS claims. These findings suggest that while technical and procedural issues remain, proper training and system optimization can enhance the quality and accessibility of healthcare services within the BPJS framework.

Combined Impact of SIMRS and BPJS on Overall Service Performance

The integration of SIMRS and BPJS national health insurance services at RSGM Ladokgi TNI AL R.E. Martadinata has brought significant improvements in healthcare service performance, particularly in the coordination between administrative units and patient care divisions. Based on interviews and direct observations, the study found that when both systems function effectively, employees feel more confident and efficient in managing patient needs. SIMRS plays a critical role in streamlining documentation, enabling real-time access to medical data, and facilitating communication between departments. In parallel, BPJS provides structured financial support, ensuring that administrative and clinical processes operate within a standardized framework.

This synergy between SIMRS and BPJS has enhanced the hospital's ability to deliver timely and accurate services. Notably, employee workflows improved as registration and verification times decreased. Staff also experienced a reduction in repetitive paperwork, which previously slowed down service delivery. Furthermore, the integration allowed for better tracking and management of patient referrals across departments, which is essential in a specialized dental and oral healthcare setting. Employees reported that SIMRS significantly aided in verifying BPJS eligibility, organizing service queues, and ensuring patients received care in a timely manner.

These findings indicate that a well-integrated digital and insurance system can significantly optimize both employee performance and patient satisfaction. However, to sustain these benefits, ongoing support is needed in the form of system training, performance monitoring, and technical infrastructure upgrades. With these measures in place, hospitals like RSGM Ladokgi can continue advancing toward more efficient, patient-centered service delivery.

However, the full integration of SIMRS and BPJS is still in progress. Some departments still rely on manual cross-checking, and system incompatibility occasionally creates delays, particularly in claim processing and billing. The hospital also faces challenges in maintaining synchronization between SIMRS modules and the BPJS online platform, especially during system updates.

Despite ongoing challenges, the integration of SIMRS and BPJS at RSGM Ladokgi TNI AL R.E. Martadinata has contributed to more standardized, transparent, and accountable healthcare services. Patient feedback indicates a marked improvement in service responsiveness and procedural clarity. Employees also report higher job satisfaction when the system functions effectively, as it reduces administrative burdens and allows them to focus more on providing quality care. These positive results demonstrate that when digital and administrative systems are well integrated, they can significantly improve service quality and employee performance. However, this integration must be supported by structured staff training, consistent system monitoring, and reliable technical support to ensure continuous improvement. These findings

highlight the importance of not only investing in digital infrastructure but also fostering institutional readiness and user competency. With these components, hospitals can maximize the benefits of technology to provide more efficient and patient-centered care.

DISCUSSION

This study aimed to analyze the impact of the implementation of SIMRS and BPJS services on improving employee service quality at RSGM Ladokgi TNI AL R.E. Martadinata. The results demonstrate that while both systems have brought positive changes in terms of efficiency and accessibility, their effectiveness is shaped by system integration, staff readiness, and institutional support. These findings align with and extend existing research on healthcare information systems and service quality.

First, the study supports the argument that the implementation of SIMRS enhances operational efficiency, particularly in patient registration, billing, and service flow (Mohammadpour et al., 2021; Pane et al., 2023). Consistent with Chang et al. (2012) and Kuo et al. (2018), the improved access to real-time data and reduction in redundant tasks boost employee productivity. However, the benefits are conditional on staff's digital competence and system usability, as also emphasized by Khalifa and Alswailem (2015) and Windari et al. (2023).

Nonetheless, challenges such as limited training, partial module integration, and system downtimes remain, reflecting barriers identified by Lumingkewas et al. (2023) and Munjirin et al. (2024). These obstacles confirm Aggelidis and Chatzoglou's (2012) findings that user satisfaction depends not just on functionality, but also on user support and interface experience. The difficulty faced by staff aligns with the EUCS (End User Computing Satisfaction) model in understanding that cognitive overload or system incompatibility can hinder effective use (Henry & Stone, 1994; Deng et al., 2022).

Second, the integration of BPJS services has positively impacted patient satisfaction and access, consistent with Fatima et al. (2018) and Saputra and Prima (2022). The availability of affordable treatment options under BPJS increases patient loyalty and trust, as shown in similar studies in both public and private contexts (Amin & Zahora Nasharuddin, 2013; Tan et al., 2019). However, this study also reveals that frequent BPJS policy updates, documentation errors, and reimbursement delays challenge employee workflow and satisfaction issues that echo those found by Zulfikar et al. (2023) and Lesmana and Taufik (2023).

Persistent challenges such as limited training, partial module integration, and system downtimes reflect barriers noted by Lumingkewas et al. (2023) and Munjirin et al. (2024). These confirm Aggelidis and Chatzoglou's (2012) view that user satisfaction depends on system functionality and user experience. Staff difficulties also align with the EUCS model, which links cognitive overload and incompatibility to poor system use (Henry & Stone, 1994; Deng et al., 2022). Despite this, SIMRS and BPJS integration improved employee confidence, task execution, and patient service, supporting Lee et al. (2012) and Naik Jandavath and Byram (2016), who emphasize the importance of system complementarity for service satisfaction.

Employee responses in this study align with Garcia-Smith and Effken (2013) and Arafa et al. (2024), indicating that intuitive, well-supported systems lead to more positive staff attitudes and performance. The importance of leadership and institutional support echoes Rahmantya et al. (2019) and Sari et al. (2024), who emphasize organizational alignment in successful digital transformation. This study confirms that properly implemented and integrated SIMRS and BPJS systems can enhance employee service quality. However, sustaining these improvements requires investment in training, system compatibility, workflow integration, and change management (Avianto & Ogi, 2019; Livinus et al., 2021; Setiorini et al., 2021). Without such support, digital tools risk increasing complexity. Future research may explore user feedback mechanisms, mobile SIMRS access, and the influence of leadership behavior on system adoption, as suggested by Palm et al. (2006) and Meesala and Paul (2018).

CONCLUSION

This study examined the implementation of SIMRS and BPJS services in improving employee service quality at RSGM Ladokgi TNI AL R.E. Martadinata. The findings reveal that both systems play a significant role in enhancing administrative efficiency, reducing patient waiting times, and improving access to healthcare services. SIMRS contributes to better coordination, data accuracy, and workflow organization among hospital staff, while BPJS services increase patient satisfaction through accessible and affordable care.

However, the effectiveness of both systems is strongly influenced by the level of user competency, system integration, and institutional support. The study highlights ongoing challenges such as limited staff training, frequent BPJS regulation changes, incomplete module integration, and system interoperability issues. These obstacles can reduce service consistency and create new administrative burdens if not addressed properly.

The integration of SIMRS and BPJS services has had a positive impact on employee performance and service quality, but requires continuous improvement efforts. Hospitals must ensure proper staff capacity building, system updates, and effective policy alignment to fully leverage these digital tools. Furthermore, cross-departmental collaboration and leadership involvement are crucial to overcome resistance to change and ensure sustained quality improvement.

This study is limited by its single-institution focus and qualitative approach, which may not fully represent broader institutional settings. This study contributes to the growing body of research on healthcare digitalization in Indonesia, particularly in the military and specialized hospital context. Future research should further explore patient perceptions, long-term system outcomes, and strategies for enhancing digital literacy and resilience in hospital service delivery systems.

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