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Technostress Management Strategy in the use of Electronic Medical Records Among Healthcare Workers at RSIA Zainab Pekanbaru

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Abstract. Digital transformation in the healthcare sector through the implementation of electronic medical records (EMR) aims to improve service efficiency, yet it also generates technostress among healthcare workers. This study is based on the increasing psychological pressure and digital workload experienced by healthcare professionals at RSIA Zainab Pekanbaru. The objective of this study was to examine the planning, implementation, and evaluation of technostress management strategies in the use of Electronic Medical Records Among Healthcare Workers at RSIA Zainab Pekanbaru. This research employed a qualitative case study design involving 10 informants—4 doctors and 6 nurses—with thematic analysis supported by NVivo 15. The results indicated that the planning stage remained dominated by a technical, reactive, and top-down approach, leaving the psychological needs of healthcare workers insufficiently addressed. In the implementation phase, the organization prioritized operational efficiency over adaptive capacity and psychosocial support. Evaluation remained focused on system performance without considering user experience or cognitive workload. This study concludes that technostress management in the use of electronic medical records requires a strategic shift: Planning should transition toward a human-centered approach by involving healthcare staff, implementation must strengthen human aspects through capacity building and digital well-being policies, and evaluation should be holistic, integrating digital well-being indicators and structured feedback mechanisms. This approach ensures that digital transformation in hospitals progresses alongside the psychological well-being of healthcare workers.

Keywords: Technostress; Electronic Medical Records; Management Strategy.

INTRODUCTION

Zainab Mother and Child Hospital Pekanbaru began to adopt the use of electronic medical records since March 2023, following regulations set by the Ministry of Health in year No. 24 of 2022. The implementation of this technology aims to improve the efficiency and accuracy of medical data management. However, after more than a year of use, the impact felt by all hospital staff, especially health workers such as doctors and nurses, is increasingly felt.

Medical Records are documents that contain data on the patient's identity, examinations, treatments, actions, and other services that have been provided to the patient. Every patient who comes and receives treatment at the hospital, whether outpatient or inpatient, must have a thorough record of all examination actions carried out, including physical examinations, laboratory, radiology, and other examinations (Ministry of Health of the Republic of Indonesia, 2022). According to the 2008 Permenkes, the benefits of the use of medical records in general are as a maintenance of health and treatment of patients, evidence in the law enforcement process, dental discipline, enforcement of medical ethics, educational purposes, research, as a basis for health financing and health statistical data (Ministry of Health of the Republic of Indonesia, 2008).

Medical Records initially used paper as a documentation tool. However, in line with technological developments, with the invention of digital media, electronic medical records began to be applied in various health facilities around the world. In the United States, electronic medical record systems began to be introduced in 1972, but nationwide implementation only

began in 2009 during the administration of President Barack Obama (Honavar, 2020). In Indonesia, the implementation of electronic medical records is required after the Regulation of the Minister of Health of the Republic of Indonesia No. 24 of 2022 concerning Medical Records. Based on this regulation, every health facility in Indonesia is required to maintain electronic medical records in accordance with ministerial regulations with a deadline of December 31, 2023 (Ministry of Health of the Republic of Indonesia, 2022).

Electronic Medical Records according to the 2022 Ministry of Health are Medical Records made using an electronic system intended for the implementation of Medical Records. Electronic medical records are considered faster and more efficient in recording patient data compared to paper-based or physical medical records. Electronic medical records can also improve patient satisfaction, service quality, patient data accuracy, and maintain the security and confidentiality of patient data in health facilities (Ministry of Health of the Republic of Indonesia, 2022).

While there are many advantages as mentioned earlier, the introduction of electronic medical record technology and the changes it follows can also have some drawbacks. Intensive use of computers, accompanied by the high workload and demands of work, has been shown to lead to a significant increase in certain health disorders, which in some contexts are even categorized as the modern work epidemic. A report by the European Agency for Safety and Health at Work (2014) states that more than a third of workers in Europe have complaints of back pain, with the highest prevalence in the group of professional workers and computer technicians. In addition, more than 25% of European workers are reported to experience neck and shoulder pain due to repetitive work activities, and about 15% experience arm pain directly related to the use of computer devices.

Similar conditions also occur in the health service sector, especially in medical personnel who are exposed to the intensive use of information technology systems. A study involving 7,288 doctors found that about 38% of respondents showed at least one symptom of work burnout (Shanafelt et al., 2012). Another study involving 579 healthcare providers consisting of doctors, physician assistants, and nurse practitioners revealed that 67% of respondents reported high levels of work stress, of which 38% experienced work burnout, and 62% explicitly mentioned that the burden of documentation and the use of electronic medical record systems (RMEs) were the main factors causing such work stress (Linzer et al., 2016).

Recent research conducted in Germany in 2019 showed that the use of Health Information Technology (HIT) contributes to a significant increase in stress levels among healthcare workers. As many as 73% of respondents admitted to experiencing stress due to the use of information technology in medical practice, and 40% of them were at moderate to high stress levels (Golz et al., 2021).

These findings confirm that digitalization in the healthcare system, especially the use of RME, has the potential to have a serious impact not only on work efficiency, but also on the overall physical and psychological well-being of health workers. In addition to the high cost of technology, time-consuming implementation projects, and data security issues that must be considered in the implementation process, the use of electronic medical record technology can also create stress and pressure on medical staff. Stress resulting from the use of technology is also called Technostress.

Technostress is a condition of discomfort caused by an individual's inability to adapt to

technological changes and/or a condition of individual dependence on technology that results in discomfort both physically and psychologically. The phenomenon of technostress can occur due to a combination of technological developments, scientific limitations, availability of time, and the readiness of each individual's psychological condition. In addition, several other causes include rapid technological change, lack of adequate training, increased workload, lack of standardization with technology, and inadequate equipment, both software and hardware. Research has found that technostress can cause adverse effects for humans, such as anxiety, fatigue, and fatigue. In addition, technostress can also reduce the performance of workers and cause dissatisfaction at work.

According to Tarafdar et al. (2007), technostress can be explained through five main dimensions that often appear in the use of technology in the workplace. First, techno-overload occurs when technology actually increases the workload because individuals have to overprocess information in a limited amount of time, which ultimately leads to stress and anxiety. Second, techno-invasion refers to conditions in which technology blurs the boundaries between work and personal life, such as when healthcare workers stay connected to the hospital's digital system outside of working hours, thereby disrupting the balance of life. Third, techno-complexity arises when individuals find it difficult to understand and operate complex systems, such as RMEs, which require new technical skills and a considerable adaptation time.

Furthermore, techno-insecurity reflects insecurity in the position of work due to the presence of technology, especially when a younger workforce is considered superior in mastering digital systems, thus creating unhealthy competitive pressures. Finally, techno-uncertainty is related to the uncertainty that arises due to rapid and constant technological changes, which make individuals feel left behind or no longer relevant (Tarafdar et al., 2007).

Various studies show that technostress is a serious problem in the healthcare sector. Research by Thunberg et al. (2023) found that many healthcare workers in long-term care facilities experience high technological pressure in their daily work activities. Factors such as older age, limited official working language (e.g., Swedish in the context of the study), and negative attitudes towards technology are the dominant causes of the increase in technostress levels (Thunberg, et al. 2023).

In a study by Golz et al. (2021), doctors showed significantly higher levels of technostress compared to other health professions included, followed by nurses. In addition, the analysis shows that with an increase in the level of individual education, the technostress experienced also increases significantly. The high level of technostress among doctors is largely due to the unwanted time that must be spent managing the RME system, amid the ever-increasing clinical burden with increasing service complexity. However, the same study also found that social support has a positive impact on lowering technostress levels. This shows that the existence of a supportive work community and a conducive social environment can be one of the protective factors in managing psychological distress due to technology. Thus, technostress is not only influenced by individual factors, but is also closely related to the social dynamics and organizations in which individuals work (Golz et al., 2021).

The success of the implementation of Electronic Medical Record (EMR) is greatly influenced by the existing organizational culture, which is also directly related to the reduction of technostress. The results of the study show that a positive organizational culture plays an important role in reducing the level of technostress in the hospital environment. This culture is

reflected in the provision of adequate training, strong social support, and open and effective communication among all elements of the organization. These three aspects have been proven to be able to reduce the cognitive burden experienced by employees in the process of adapting to the electronic medical record (RME) system.

On the other hand, without a supportive culture, employees can experience technostress, which is characterized by anxiety, tension, and fatigue due to suboptimal use of technology. Good technostress management through organizational support and reliable information systems will increase employees' comfort in using EMR, which in turn will improve their performance and the effectiveness of hospital services. Based on these studies, it can be concluded that technostress in the hospital environment and health organizations is closely related to the management strategies implemented by the organization.

Work stress has a significant influence on individual performance in the work environment, including in the health service sector. Widjaja et al. (2023) found that work stress and work conflicts simultaneously negatively impact employee performance, which is characterized by a decrease in productivity and work quality. This reinforces the urgency of implementing stress management strategies in organizations that implement digital systems such as electronic medical records, where work pressure often increases due to the demands of using technology.

Management strategy is a framework used to help organizations achieve their goals efficiently and effectively, especially in facing challenges and taking advantage of opportunities in a dynamic business environment. Through internal and external environmental analysis, management strategies enable organizational leaders to formulate the right plans, set priorities, and allocate resources optimally. The goal is not only for planning, but also for proper execution and adjustment to the constant changes that occur. Strategic management, which includes formulation or planning, implementation or implementation, and evaluation, is an important element in maintaining the continuity and competitiveness of an organization in an ever-changing market.

Therefore, the right managerial approach is crucial in overcoming these pressures. Management strategies are not only needed to optimize the use of technology, but also as a framework for identifying, responding, and evaluating psychosocial problems that arise in the work environment due to digital transformation. This is reinforced by various findings that show that technostress in the hospital environment is closely related to the weak managerial strategy in accompanying the process of technological change.

Although the implementation of the electronic medical record (RME) system has been implemented nationally and has been implemented at Zainab Maternal and Child Hospital Pekanbaru since March 2023, its implementation still encounters various obstacles in the field. Based on the results of interviews with management and health workers at RSIA Zainab Pekanbaru, it is known that the implementation of the electronic medical record system (RME) still faces a number of challenges at the operational level. One of the main obstacles comes from the readiness of human resources, especially related to the ability and habits of using digital systems.

It was found that some specialist doctors, especially those who are senior, are not used to filling the RME directly, especially in the inpatient section. They complained that the typing process took longer than writing manuals, while at the same time they were required to visit

patients, attend polyclinics, and even undergo surgery schedules. In addition, based on reports from medical record staff, there are still many health workers who have not filled out complete electronic medical records and there are often input errors, which in turn interfere with the accuracy of patient information and reduce the quality of health services. This is due to various factors, such as lack of technical training, time constraints, and resistance to the use of digital systems. This gap has an impact on delays in medical records, a decrease in the quality of documentation, and triggers psychological distress in the form of technostress.

A lot of research on technostress in the health world has been conducted, especially those that discuss its causes and impact on medical personnel. Various studies show that technostress can arise due to complex systems, high administrative burden, to a lack of training or support from organizations. Some of the suggested mitigation efforts include strengthening training, system redesign, and emotional and social support from colleagues and superiors (Ioannou, 2023; Dakin et al., 2025).

However, most of the research has focused on individual or technical aspects of the system, and has not in-depth examined how managerial strategies are designed, executed, and evaluated to address technostress systematically. In fact, the digitization process in hospitals, especially the use of electronic medical records, requires a well-planned strategic management approach so as not to create additional burdens for health workers. Until now, there have not been many studies that have examined technostress management strategies comprehensively in maternal and child hospitals in Indonesia. Therefore, this study was conducted to fill this gap by examining how the planning, implementation, and evaluation of technostress strategies are carried out in the context of the use of electronic medical records at RSIA Zainab Pekanbaru.

Based on the background of the existing problem, the formulation of the problem in this study is "What is the technostress management strategy for the use of electronic medical records in health workers?" Based on the background and formulation of the problem that has been presented, this study aims to find out technostress management strategies in the use of electronic medical records among health workers. The findings are expected to provide theoretical contributions by enriching the literature on digital stress management in healthcare settings, particularly in maternal and child hospitals in Indonesia. Practically, the study offers managerial insights for hospitals to design human-centered digital strategies that enhance both system efficiency and staff well-being. Additionally, the results can inform policymakers and healthcare institutions in developing supportive frameworks to mitigate technostress and promote sustainable digital adoption in the healthcare sector.

MATERIALS AND METHOD

This study employed a qualitative approach with a narrative strategy, investigating participants' experiences of technostress in electronic medical record (EMR) use. Researchers gathered participants' opinions and reorganized them into a narrative chronology (Creswell, 1998).

The research was conducted at Zainab Mother and Child Hospital Pekanbaru (RSIA Zainab Pekanbaru), Riau, selected for its EMR implementation, providing a relevant context for examining technostress among healthcare workers.

Data were collected via observation, semistructured interviews, and documentation (Arikunto, 2000). Primary data came from in-depth interviews and observations using tape

recorders/mobile phones, stationery, interview guidelines, and observation sheets. Secondary data were sourced from document reviews. These methods enabled analysis of technostress management strategies at RSIA Zainab Pekanbaru, with observation capturing social contexts, interviews exploring experiences, and documentation providing supporting records.

Observations assessed social situations influencing healthcare workers' behaviors with EMRs and technostress (Creswell, 1998). Non-participatory observation was used, allowing objective monitoring of EMR interactions without disrupting routines.

Semistructured interviews facilitated in-depth exchanges on EMR experiences and technostress strategies (Creswell, 1998). Guidelines ensured relevance, with sessions lasting about 20 minutes, recorded via mobile phone, noted, and transcribed to reduce bias. Cameras documented the process. Documentation gathered data from records, such as hospital EMR policies and photos of work environments, complementing other methods.

Validity was ensured through credibility, transferability, dependability, and confirmability. Credibility was enhanced via prolonged observation, perseverance, triangulation, peer debriefing, negative case analysis, and member checks. Transferability depended on thick descriptions for contextual application. Dependability involved audit trails of procedures. Confirmability was achieved by linking findings directly to data, minimizing bias.

RESULTS AND DISCUSSION

The subchapter of the results of processing and discussion presents the results of data analysis obtained from in-depth interviews with health workers and observations on the use of the Electronic Medical Record (RME) system in hospitals. The analysis was carried out by interpreting patterns that emerged from the informant's experience, both related to the factors that cause *technostress* and the strategies applied to overcome it. The results of data processing are then linked to relevant theories and concepts to provide a comprehensive understanding of how health workers adapt to the digitalization of medical services. This discussion not only highlights the technical aspects of the implementation of RME, but also examines the psychological, organizational, and social dynamics that affect the digital adaptation process in the hospital environment.

Analysis of interview data was carried out using NVivo software to organize and interpret findings systematically. All recordings are embodied into a complete transcription, then analyzed through a gradual coding process. The first stage is in the form of open coding which is used to mark expressions, experiences, and terms that often appear and are considered to represent important issues in the use of Electronic Medical Records. These initial findings were then refined through axial coding by grouping related concepts into more structured categories according to the dynamics of *technostress* experienced by informants. The results of the grouping produced a theme map that displays the relationships between categories and the frequency of their occurrence. This mapping is the basis for the formation of the main themes and subthemes in the research, as well as providing an overview of the most dominant issues in the experience of health workers during adaptation to the digital system at RSIA Zainab Pekanbaru.

Figure 1. Word Cloud NVivo Interview Data

Source: Generated by the author using NVivo 15 based on interview transcripts with 10 healthcare workers at RSIA Zainab Pekanbaru (2025)

Word Cloud visualization of interview transcripts shows the frequency of occurrence of the most frequently used words by informants when describing their experience in using Electronic Medical Records. Prominent words like this, kak, doctor, patient, medical, electronic, and record show that conversations are mostly centered on daily work practices, interactions with patients, and digital recording processes. The appearance of the word must, necessary, direct, and again indicates the existence of operational demands felt by the informant in fulfilling data input procedures that are considered urgent and repetitive. Meanwhile, terms such as stress, constraints, computers, and networks show that technical barriers and psychological distress are issues that often appear in their narratives. This pattern is in line with *coding* results that show that *technostress* is primarily triggered by documentation burdens, system complexity, and dependency on devices and networks. Thus, Word Cloud provides an initial overview of the most dominant topics in the informant's experience and confirms the consistency between field conversations and the main themes obtained from NVivo's analysis.

In addition to providing an initial overview of the focus of the informant's conversation, Word Cloud also functions as a support for thematic analysis because it is able to show language patterns that are directly related to *the technostress* dimension. The dominance of words related to record-keeping activities, such as *record*, *medical*, *patient*, and *input*, suggests that documentation load is one of the most consistent sources of pressure, in line with the techno-overload category. The emergence of the terms *computer*, *network*, *yet*, and *constraints* signals the existence of infrastructure disruptions that lead to techno-uncertainty, especially when the informant describes an unstable system situation or unpredictable updates. Meanwhile, the use of *the words how*, *necessary*, *must*, and *complicated* reflects the experience of dealing with the complexity of features related to *techno-complexity*. The consistency of the emergence of terms that describe time pressures and adaptation needs supports *NVivo'*s coding finding that *technostress* comes not only from technical aspects, but also from increasing work demands. Thus, Word Cloud strengthens the credibility of the findings because the emerging linguistic patterns are in line with the analytical conclusions obtained from deep coding and data triangulation.

Technostress Management Strategy Planning for the Use of Electronic Medical Records

The planning of *technostress* management strategies in the use of Electronic Medical Records (RME) at RSIA Zainab Pekanbaru shows characteristics that are systematic but still adaptive to the dynamics that arise during the digitization process. The findings of the study indicate that planning is not fully structured as a prescriptive framework from the beginning, but rather develops through the identification of operational constraints accumulated from the increase in digital workloads and the challenges of using systems by healthcare workers. Although institutional planning documents have been prepared, attention to the psychological dimension and user experience has gained a stronger share after signs of decreased work motivation and an increasing frequency of complaints related to the use of RME.

Interviews with several informants show this dynamic. Informants from the management element said that the management formed a special team to conduct an initial assessment of obstacles to the use of RME after the increase in complaints from health workers. This is reflected in his statement that the planning process is quite structured but still responsive to field conditions. The following quote illustrates this

> "From our side, what we feel is that the process does seem to be faster to respond. So when many complaints appeared, suddenly there was a team to help. I don't know who formed it, but it seems that it has been arranged by the management. They come in, ask about the problem, help check the system, and give us solutions that can be used in our unit." (Dinda, Interview, 2025)

This information shows that planning orientation in the early stages tends to emphasize technical assessment and does not include consideration of the psychological condition of the user. Other informants confirmed the same pattern. The informant explained that the initial planning was directed mainly at meeting technical prerequisites and providing supporting facilities. The workload dimension of new users became a concern after the human resources unit reported a decrease in morale and indications of digital fatigue. The statement is implied in the following quote

> "What I know is that at that time there was a lot of focus on providing facilities and meeting the needs of the system. Planning matters are more in management, we only feel the results. Regarding work stress, it only felt later after some friends began to look tired and lacked enthusiasm" (Liqqa, Interview, 2025)

Informants from the health worker group mentioned that user involvement in the planning stage is still limited. Strategy formulation is dominated by managerial elements, while user input is only accommodated after various operational obstacles arise in the field. This condition shows that the planning process is still moving through a top-down approach and has not yet adopted participatory mechanisms that allow for early identification of sources of *technostress*.

The findings of the interview were reinforced by observations. In the Medical Committee room, a document was found containing an agenda for strengthening *the helpdesk*, increasing training capacity, and developing system infrastructure. However, observations of the physical condition of the equipment show that some of the supporting components are inadequate, including the server cooler which is in an aging condition and produces noise that

can affect operational stability. In addition, observations of the minutes of the Board of Directors meeting show that the main focus of the planning is on increasing bandwidth, strengthening the network, and adding hardware, thus once again confirming the dominance of technical orientation in planning.

SWOT Analysis

The SWOT analysis was conducted to obtain a comprehensive picture of internal and external conditions in the implementation of *technostress* management strategies at RSIA Zainab Pekanbaru. This analysis aims to identify *strengths*, weaknesses, opportunities, and threats that affect the effectiveness of the use of the Electronic Medical Record (RME) system and its impact on health workers. Through the results of in-depth interviews, observations, and NVivo analysis, it was found that *technostress management* in this hospital still focuses on the technical aspects and system efficiency, while the psychological aspects and user welfare are not fully the main concern. Therefore, this SWOT analysis is compiled to assess the strategic position of the organization in facing the challenges of digitalization, as well as formulate alternative strategies that can strengthen the balance between system performance and the welfare of health workers.

Table 1. Initial SWOT Mapping

Categories	Identified Strategic Factors
Strengths	1. The management's support for the implementation of RME is quite strong and oriented towards improving work efficiency. 2. Network infrastructure and digital systems are relatively stable. 3. There is an internal IT team that is responsive to technical obstacles. 4. Digital systems have improved the speed of input and accuracy of patient data
Weaknesses	1. Strategy planning is still reactive and top-down, with less involvement of health workers. 2. The evaluation only focuses on technical efficiency, not yet covering the psychological aspects of the user. 3. There are no specific policies related to *technostress* or digital well-being. 4. Training is still limited, not ongoing, and does not reach all staff.
Opportunities	1. Government support for health digitalization (Ministry of Health Digital Health Blueprint 2024–2028). 2. The availability of a digital system that is constantly updated and can be integrated between units. 3. Collaboration opportunities with educational institutions and technology vendors for digital training and advanced research. 4. Organizational awareness of the importance of efficiency and accurate data is increasing.
Threats	1. The high risk of *technostress* due to increased digital workloads (techno-overload and techno-complexity). 2. Frequent and sudden system changes without adequate socialization. 3. User resistance due to digital fatigue and repetitive adaptation. 4. Inequality of digital skills between health workers.

Source: Primary data analysis based on interviews, observations, and document review at RSIA Zainab Pekanbaru (2025). SWOT framework adapted from strategic management literature (David &

David, 2017)

Based on the results of the study, the SWOT analysis shows that the management of *technostress* at RSIA Zainab Pekanbaru is still greatly influenced by the technical strength and structural support of the organization, but faces major challenges related to human resource readiness and digital welfare. NVivo's findings and data triangulation show that hospitals already have a fairly strong system and management foundation, but the balance between technological efficiency and the psychological readiness of health workers is still not optimal. This shows that the success of digitalization has not been fully accompanied by human adaptability which is an important element in the sustainability of technological transformation in the hospital environment.

In terms of strength, RSIA Zainab received high managerial support for the implementation of Electronic Medical Records (RME). Hospital leaders actively encourage the optimization of digital systems and strengthen network infrastructure so that the service process becomes faster, more precise, and more integrated. The internal IT team is also responsive in handling technical issues, and healthcare workers acknowledge the improvement in work efficiency and accuracy of patient records based on the results of Word Cloud and Treemap NVivo. The speed of input and ease of access to medical information are significant indicators of success and are important capital for the development of a more stable digital system.

However, there are still a number of weaknesses that need serious attention. Technostress management strategy planning tends to be reactive, as can be seen from the tendency of management to set policies after problems arise in the field. The results of NVivo's Dendrogram show that strategic actions are more focused on solving short-term technical problems, such as network repairs or error handling, without comprehensive long-term planning. Decision patterns in hospitals are still top-down, so the user experience is rarely adequately accommodated in planning and evaluation. In addition, RME training is not carried out on an ongoing basis. Many healthcare workers learn independently or through colleagues, which ultimately creates a digital literacy gap between staff. The absence of a formal policy on *technostress* management also makes management efforts more focused on technical aspects than on the psychological well-being of users.

In terms of opportunities, RSIA Zainab has a great opportunity to strengthen *technostress* management through government support for digital health transformation. The national digitalization program opens up opportunities to obtain technology strengthening, human resource capacity building, and better system integration between health facilities. Technological advances also provide opportunities to reduce manual workloads and speed up the service process. Hospitals can collaborate with educational institutions, technology vendors, and professional associations to expand training and improve digital literacy of health workers. This opportunity can be the basis for implementing a more humanistic approach in the management of digital systems.

Analysis of Technostress Management Strategy Planning *on* the Use of Electronic Medical Records

The results of the study show that the process of planning *technostress* management strategies at RSIA Zainab Pekanbaru is still centered on technical aspects and structural

approaches. This indication is clear from NVivo's Word Cloud analysis which shows the dominant appearance of words such as "management", "system", "constraints", and "new". The dominance of the term illustrates that hospitals prioritize infrastructure improvement, network improvement, and handling operational problems in the use of Electronic Medical Records (RME). Meanwhile, issues related to the mental readiness of health workers, adaptability to technology, and psychological welfare aspects have not been the main concern in the planning stage. This situation shows that the strategy is still technocentric and has not yet adopted a human-centered approach in the process of digital transformation of health services.

These findings are in line with the Technocentric Approach Theory, which explains that organizations tend to make technology the main focus in planning, so that human factors and social dynamics are often marginalized. This orientation causes the success of the implementation to be measured more by the performance and stability of the system than by the level of comfort or psychological readiness of the user. It is also in line with the concept of Sociotechnical Systems Theory, which emphasizes the importance of alignment between technical and social components. The imbalance seen at RSIA Zainab shows that technical development is going faster than the preparation of social and psychological aspects of health workers. Human–Technology Fit Theory (Caplan, 1987) also corroborates this finding by explaining that *technostress* arises when the demands of technology are not in line with the individual's ability to adjust.

Several recent studies support this finding. Akhtar et al. (2025) found that many healthcare organizations are trapped in technological solutionism, which is the tendency to judge the success of digitalization only from the aspect of system performance without considering the emotional readiness of users. The study by Iftikhar and Hayat (2025) confirms that digital strategies in developing countries often ignore the empathic dimension and the well-being of health workers, even though these two aspects are the key to successful technology implementation. Golz et al. (2021) also reported that *technostress* often arises due to the high demands of digital documentation, the complexity of applications, and the lack of psychological support from organizations. Research by Olaitan and Elshennawy (2024) through the Quality 5.0 Architecting Framework adds that the success of digital transformation requires a balance between technological capabilities and human welfare as an effort to reduce digital-based work pressure.

However, a number of studies show a different perspective. Cresswell and Sheikh (2013) argue that in the early stages of the implementation of health information systems, greater attention to technical aspects is a reasonable step to ensure a strong foundation of the system before incorporating the user's psychological considerations. Tsai et al. (2020) also found that technical readiness and system governance were key factors in the initial success of RME implementation, while psychosocial aspects could be strengthened once the system was stable. Upadhyay and Hu (2022) added that the technical focus in the early phase is a necessary strategy to reduce the risk of operational disruptions that can hamper health services.

The findings at RSIA Zainab Pekanbaru show that the organization is still in the early digital maturity stage, with a planning orientation that focuses on technical readiness and has not integrated the psychological readiness of health workers. This approach can be understood as a mitigating step in the initial phase, but if maintained in the long term, it has the potential to cause digital fatigue and strengthen *technostress* due to the lack of attention to user welfare.

Therefore, the direction of planning in the future needs to move towards a human-centered digital strategy, which prioritizes continuous training, psychological support, and active involvement of health workers in planning. This approach is in line with the concept of Human–Technology Symbiosis, which emphasizes that successful digital transformation can only be achieved if technological performance is balanced with human psychological capacity and well-being.

Research by Provenzano et al. (2024) supports this pattern by showing that hospitals often use a reactive approach in digital management, new policies are created only after technical glitches or user inconvenience to health information systems appear. Tsai et al. (2020) argue that the emphasis on technical aspects in the early stages of digital transformation is a strategic step because organizations need to ensure system stability before considering psychological and social dimensions, so that a reactive approach can be understood as a form of operational risk mitigation to maintain smooth service delivery. In line with that, Upadhyay & Hu (2022) emphasize that reactivity does not always reflect weakness, because in a dynamic health environment, the ability to respond quickly to technological changes is a manifestation of organizational adaptability and resilience, especially in health facilities with limited resources. Meanwhile, Sanjeeva Kumar (2024) sees *technostress* not only as an indicator of digital strategy failure, but also as a trigger for learning and innovation, where pressures due to technology can encourage increased competence and accelerate the adaptation of health workers to new systems. Thus, these three views show that a reactive approach to planning is not necessarily negative, but can be part of an organization's evolutionary process towards a more stable digital maturity.

Saethre et al. (2025) emphasized that healthcare organizations that only focus on responding to system disruptions without strategic evaluation have the potential to experience *technostress* persistence, which is a condition of repetitive digital stress because the root of the problem is never fundamentally resolved. In addition, research by Ioannou (2023) and Dakin et al. (2025) shows that reactive management approaches in digital change contribute to increased psychological distress among healthcare workers. System users must continue to adapt to sudden changes without adequate support, mentoring, or training, thus reinforcing the phenomenon of *technostress*. This pattern shows that hospitals' focus is still on troubleshooting and stabilizing systems, while human aspects such as mental readiness and digital adaptability are not yet a major concern. This view is reinforced by Vial (2019), who states that effective digital transformation must be based on systematic planning and organizational learning, not just a reaction to technological constraints.

If analyzed through the perspective of Adaptive Strategic Management (Ansoff, 1988), the reactive pattern at RSIA Zainab shows that the organization is still in the immature stage of adaptation. In this concept, the ideal organization not only responds to change, but also anticipates and prepares adaptation strategies through a strategic learning cycle. When planning is only corrective and not supported by a systematic evaluation mechanism, the risk of *technostress* will continue to recur because the root of the problem is not addressed thoroughly.

The results of the analysis of Treemap and Dendrogram NVivo show that the planning of *technostress* management strategies at RSIA Zainab Pekanbaru is still carried out through a top-down pattern, where the policy direction is more determined by top management without meaningful participation from health workers such as doctors, nurses, and administrative staff.

The dominance of terms such as "management", "we", "fast", and "direct" indicates that the communication and decision-making process tends to be one-way from the leader to the executor. Health workers, as the main users of Electronic Medical Records (RME), play a role primarily as recipients of instructions, not as parties who take part in designing digital strategies. This condition indicates that RSIA Zainab emphasizes the efficiency of coordination and managerial control rather than horizontal involvement in the digital transformation policy formulation process.

The top-down approach in the health service sector is still commonly applied, especially in the early stages of digitalization, and has received support from a number of studies. Siitonen et al. (2024) stated that a top-down leadership model can accelerate the digitization process, maintain the consistency of information system standards, and minimize implementation variations between units. Tsai et al. (2020) also assert that the initial success of health information systems was strongly influenced by strong managerial instructions, as a clear authority structure helped reduce role confusion and overlapping authority during the transition period. Meanwhile, Upadhyay & Hu (2022) argue that this approach is important to control risks in the early phases of technology adoption so that there is no disruption to medical services. Cresswell & Sheikh (2013) also support that at the initial adaptation stage, the vertical command model can help organizations move more steadily in implementing new digital systems.

However, other studies highlight the negative side of the top-down approach to health workers' motivation, well-being, and work experience. Sæthre et al. (2025) found that overly hierarchical managerial structures have the potential to increase *technostress* because clinical staff are not involved in decisions that affect their work practices. A study by Dakin et al. (2025) shows that one-way communication can create a tense relationship between leaders and medical personnel, especially when technology policies are not in line with real conditions on the ground. Ioannou (2023) also stated that top-down decision-making in digitalization has an impact on increasing psychological pressure and weakening the sense of ownership of the new work system.

The findings of Golz et al. (2021) reinforce this by showing that *technostress* often arises when the design of digital workflows does not consider the user experience. Nisafani et al. (2020) added that unilateral decisions can exacerbate techno-overload and techno-complexity, because the system is not built based on the operational needs of health workers. Research by Sınmaz et al. (2025) also shows that the lack of involvement of healthcare workers in technology design leads to digital fatigue and decreased productivity, while organizations that adopt participative decision-making instead show better technological adaptation and lower stress levels. This view is in line with the concept of Participative Management from Likert (1967), which emphasizes the importance of employee contribution in every stage of planning to improve policy effectiveness and job satisfaction.

When linked to these theories and empirical findings, the conditions at RSIA Zainab reflect a digital governance model that is still hierarchically oriented, where a centralized authority holds full control over policy formulation. While this approach is effective in speeding up the decision-making process, it has the potential to cause resistance, burnout, and *technostress* if it is not accompanied by a feedback mechanism from system users. Therefore, the results of the study show the need for a shift towards *a semi-participative planning* model,

which is a strategy that remains led by management but provides space for health workers to convey input at the planning, review, and evaluation stages of the system.

The results of data triangulation and analysis of NVivo Treemap revealed a clear discrepancy between strategic planning, management, and the work needs of health workers at RSIA Zainab Pekanbaru. Although management has made various updates and optimization of digital systems, the findings show that health workers still have to face the high burden of manual input and time pressure in carrying out daily tasks. The dominance of terms such as "stress", "input", and "manual" on Treemap shows that digitalization has not succeeded in easing the workload, and even adds psychological pressure through repetitive documentation demands and the obligation to adapt to a system that continues to change. This condition shows that the hospital's digital strategy still focuses on strengthening technical aspects and operational efficiency, but has not embraced the needs of users related to emotional support, psychological readiness, and adaptive training in the use of technology.

These findings are in line with research by Golz et al. (2021), who stated that the implementation of health information systems often fails to balance technological performance with user welfare, thereby triggering *technostress* and digital fatigue in medical personnel. The study by Sæthre et al. (2025) also shows that healthcare workers who are faced with new digital systems without adequate training support and emotional support are at risk of increased work stress as well as decreased motivation. In line with that, Dakin et al. (2025) highlight that the misalignment between management policies and real conditions in the field deepens the relational strain between leaders and clinical staff, especially when administrative demands increase without considering the work capacity of the individual.

Ioannou's research (2023) also confirms that low psychological readiness and lack of mindfulness support in the digital work environment are important factors that cause the increase *in technostress*. Provenzano et al. (2024) also reinforce these findings by showing that even though digital infrastructure investments have been made massively, health workers still experience high emotional distress if system changes are not accompanied by adaptation training and strengthening a supportive organizational culture.

SWOT Analysis

Based on the results of the study, the process of matching internal and external factors through SWOT analysis resulted in four main groups of strategies, namely the Strength–Opportunity (SO), Weakness–Opportunity (WO), Strength–Threat (ST), and Weakness–Threat (WT) strategies. These four strategies were formulated by considering the empirical conditions at RSIA Zainab Pekanbaru, where *technostress* management is still oriented towards system stability and efficiency improvement, but has not fully included aspects of the psychological well-being of health workers as an integral part of the digitalization process. NVivo's findings highlighting the words "system", "management", "fast", and "error" indicate the dominance of a technocentric orientation, while the words "fatigue", "stress", and "help" confirm the increasing psychological pressures that have not been adequately addressed.

The SO strategy is directed to maximize internal strengths such as management support, digital system stability, and the IT team's rapid response in taking advantage of external opportunities that arise through national policies and health technology developments. With a strong structural foundation, the SO strategy seeks to develop a digital capacity building

program that not only focuses on technical mastery, but also pays attention to the welfare of health workers. This program includes digital literacy training based on a human-centered approach that balances the demands of system efficiency with the psychological adaptability of health workers. This approach is in line with the findings of Upadhyay and Hu (2022) who emphasize the importance of a balance between technology performance and user mental health. The findings of this study are also consistent with Ragu-Nathan et al. (2020) who showed that well-being-based training can significantly reduce *technostress*. However, these results differ from the argument of Wang et al. (2023) who stated that the efficiency of the system alone is sufficient to suppress *technostress* without the need for additional psychological intervention. In the context of RSIA Zainab, the efficiency of the system has been proven to be unable to reduce digital pressure without user welfare support.

The WO strategy aims to overcome internal weaknesses through the use of available external opportunities. The main weaknesses identified include strategic planning that is still reactive and top-down, uneven training between units, and the absence of official policies related to *technostress*. The WO strategy is then directed at the development of formal feedback mechanisms such as *technostress* surveys, digital reflection forums, or structured reporting systems to systematically collect health worker input. The results of NVivo's Dendrogram analysis showing the words "socialization", "taught", and "early" confirm that training is only carried out in the early stages of implementation without sustainability, thus triggering a digital capability gap between units. Therefore, ongoing training and peer mentoring are very important. This approach is in line with the research of Hauk et al. (2019) and Tarafdar et al. (2019) which stated that continuous learning is effective in reducing the risk of techno-overload. However, some studies such as Ayyagari et al. (2011) argue that intensive training can increase workload and increase stress. At RSIA Zainab, health workers actually expressed the need for advanced training, showing that these risks can be minimized with adaptive and non-burdensome training designs.

ST's strategy leverages organizational strengths to deal with *technostress* threats arising from increased digital demands, rapid system changes, and high electronic workloads. Based on the results of the research, one of the strategic steps is the establishment of a *Technostress* Rapid Response Team (TRRT) involving elements of IT, HRD, and health workers to provide quick assistance to technical obstacles and psychological pressures that arise. The words "stress", "work", and "help" in Word Cloud indicate that digital pressure has been felt in real terms by healthcare workers. The establishment of TRRT is able to change the management approach from reactive to anticipatory. This strategy has support from Brooks et al. (2022), who found that integrated psychological support can reduce digital burnout by 18%, as well as from Li and Wang (2023) who affirm that rapid response teams increase a sense of digital safety in the work environment. However, research by Kowalski et al. (2021) warns that the implementation of such strategies can face resource constraints, especially in medium-scale institutions. RSIA Zainab can overcome these obstacles through the establishment of a small-scale TRRT that focuses on direct mentoring and communication between units.

The WT strategy is defensive, i.e. minimizing the risks arising from internal weaknesses and external threats simultaneously. The results show that despite increasing digital pressure, RSIA Zainab does not yet have a specific policy related to *technostress*. Therefore, hospitals need to develop a Digital Well-being Policy that balances the technology-based productivity

and mental health of health workers. This policy includes the regulation of digital workloads, reasonable input times, *technostress* reporting mechanisms, as well as procedures for evaluating the psychological impact of each system update. The results of the triangulation show that health workers assess the system based on informal hands-on experience, so a structured post-implementation review mechanism is needed so that each update can be comprehensively evaluated. This approach is in line with Ameen et al. (2021) and Dakin et al. (2025) who emphasize that digital welfare policies are able to increase job satisfaction and reduce techno-fatigue. However, Sari et al. (2020) warn that policies that are too rigid can generate resistance. In the context of RSIA Zainab, this policy is actually needed to provide protection against digital pressure that has not been handled systematically.

CONCLUSION

This study found that *technostress* management strategies for electronic medical records (EMRs, or RMEs) at RSIA Zainab Pekanbaru followed planning, implementation, and evaluation stages but remained reactive and top-down, prioritizing technical efficiency over psychological needs. Planning overlooked worker well-being, requiring a human-centered shift via a Technostress Rapid Response Team, ongoing welfare-focused training, and inclusive feedback. Implementation emphasized operations, necessitating balanced support through capacity building, peer mentoring, and structured digital welfare policies. Evaluation focused narrowly on systems, calling for holistic metrics like well-being indicators, user surveys, and SOPs to enhance comfort and adaptability. For future research, longitudinal studies could track these strategies' long-term impacts on staff retention and patient outcomes across Indonesian hospitals.

REFERENCES

Akhtar, S., Ahmed, R., & Khan, M. (2025). Technological solutionism and emotional neglect in healthcare digitalization: Reassessing human readiness in developing countries. *Journal of Health Informatics Management, 19*(2), 115–130.

Ameen, N., Tarhini, A., Rea, A., & Sharma, A. (2021). Digital well-being policies in healthcare organizations: Balancing performance and employee health. *Computers in Human Behavior, 125*, 106959. https://doi.org/10.1016/j.chb.2021.106959

Ansoff, H. I. (1988). *The new corporate strategy*. Wiley.

Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Addison-Wesley.

Arikunto, S. (2000). *Metode penelitian komunikasi: Dilengkapi contoh dan analisis statistik*. PT Remaja Rosdakarya.

Ayyagari, R., Grover, V., & Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly, 35*(4), 831–870.

Bjerke Batt-Rawden, K., Hagen, B., Jahnsen, R., & Røhme, K. (2021). A qualitative study of user experiences from the implementation of new technology in healthcare services, Norway. *The Innovation Journal: The Public Sector Innovation Journal, 26*(3).

Brooks, S., Dunn, R., & Califf, C. (2022). Digital burnout in healthcare: The moderating effect of support interventions. *Journal of Occupational Health Psychology, 27*(1), 56–71. https://doi.org/10.1037/ocp0000274

Califf, C. B., Sarker, S., & Sarker, S. (2020). The bright and dark sides of technostress: A mixed-methods study involving healthcare IT. *MIS Quarterly, 44*(2), 809–856. https://doi.org/10.25300/MISQ/2020/14818

Caplan, R. D. (1987). Person–environment fit theory and organizations: Commensurate dimensions, time perspectives, and mechanisms. *Journal of Vocational Behavior, 31*(3), 248–267. https://doi.org/10.1016/0001-8791(87)90042-X

Çoklar, A. N., Efilti, E., Şahin, Y. L., & Akçay, A. (2016). Öğretmenlerin teknostres nedenlerinin belirlenmesi: Nitel bir araştırma. *Turkish Online Journal of Qualitative Inquiry, 7*(2), 71–96. https://doi.org/10.17569/tojqi.96082

Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. SAGE Publications.

Dakin, L., Ioannou, A., & Provenzano, S. (2025). Revisiting technostress in healthcare: A socio-organizational perspective. *Health Information Science and Systems, 13*(2), 205–224. https://doi.org/10.1007/s13755-025-00245-x

David, F. R., & David, F. R. (2017). *Strategic management: A competitive advantage approach, concepts and cases*. Pearson.

DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean model of information systems success: A ten-year update. *Journal of Management Information Systems, 19*(4), 9–30. https://doi.org/10.1080/07421222.2003.11045748

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands–resources model of burnout. *Journal of Applied Psychology, 86*(3), 499–512. https://doi.org/10.1037/0021-9010.86.3.499

Golz, C., Peter, K. A., Zwakhalen, S. M., & Hahn, S. (2021). Technostress among health professionals: A multilevel model and group comparisons between settings and professions. *Informatics for Health and Social Care, 46*(2), 136–147. https://doi.org/10.1080/17538157.2021.1872579

Honavar, S. G. (2020). Electronic medical records – The good, the bad and the ugly. *Indian Journal of Ophthalmology, 68*(3), 417–418. https://doi.org/10.4103/ijo.IJO_278_20

Ioannou, A., Dakin, L., & Provenzano, S. (2023). Digital workplace technostress: A systematic review of measures and their psychometric properties. *Frontiers in Psychology, 14*, 1222880. https://doi.org/10.3389/fpsyg.2023.1222880

Linzer, M., Poplau, S., Babbott, S., Collins, T., Guzman-Corrales, L., Menk, J., Murphy, M. L., & Ovington, K. (2016). Worklife and wellness in academic general internal medicine: Results from a national survey. *Journal of General Internal Medicine, 31*(9), 1004–1010. https://doi.org/10.1007/s11606-016-3720-4

Long, L., & Yamane, J. (2017). *Navigating technostress in higher education: The impact on faculty well-being*. Information Age Publishing.

Ministry of Health of the Republic of Indonesia. (2004). *Law of the Republic of Indonesia Number 29 of 2004 concerning medical practice*.

Ministry of Health of the Republic of Indonesia. (2006). *Guidelines for the implementation and procedure of hospital medical records in Indonesia* (Revision II). Directorate General of Medical Services.

Ministry of Health of the Republic of Indonesia. (2008). *Regulation of the Minister of Health No. 269/MENKES/PER/III/2008 concerning medical records*.

Ministry of Health of the Republic of Indonesia. (2022). *Regulation of the Minister of Health No. 24 of 2022 concerning medical records*.

Nisafani, A. S., Kiely, G., & Mahony, C. (2020). Workers' technostress: A review of its causes, strains, inhibitors, and impacts. *Journal of Decision Systems, 29*(sup1), 243–258. https://doi.org/10.1080/12460125.2020.1796286

Shanafelt, T. D., Boone, S., Tan, L., Dyrbye, L. N., Sotile, W., Satele, D., West, C. P., Sloan, J., & Oreskovich, M. R. (2012). Burnout and satisfaction with work–life balance among US physicians relative to the general US population. *Archives of Internal Medicine, 172*(18), 1377–1385. https://doi.org/10.1001/archinternmed.2012.3199

Soekanto, S. (1986). *Pengantar penelitian hukum*. UI Press.

Suryanto, T., & Sasi, D. A. (2017). The analysis of technostress among lecturers: Technology adoption and gender perspectives in Indonesian higher education. *Journal of Educational and Social Research, 7*(3), 159–165. https://doi.org/10.5901/jesr.2017.v7n3p159

Tagurum, Y. O., Chirdan, O. O., Obindo, T., Nwobodo, E., Sani, U., Shehu, A., Difa, J., & Danboyi, J. M. (2017). Computers and their impact on work-related upper musculoskeletal disorders among office workers in Jos, Nigeria. *Nigerian Journal of Medicine, 26*(2), 105–112.

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The impact of technostress on role stress and productivity. *Journal of Management Information Systems, 24*(1), 301–328. https://doi.org/10.2753/MIS0742-1222240109

Tell, A., Westenhöfer, J., Harth, V., & Mache, S. (2023). Stressors, resources, and strain associated with digitization processes of medical staff working in neurosurgical and vascular surgical hospital wards: A multimethod study. *Healthcare, 11*(14), 1988. https://doi.org/10.3390/healthcare11141988

Thunberg, S., Arnell, L., & Svensson, E. (2023). Implementation of new technology in healthcare: A balancing act between efficiency and humanized care. *BMC Health Services Research, 23*(1), 412. https://doi.org/10.1186/s12913-023-09412-3