

Ergonomic Work Design and Its Influence on Healthcare Professionals' Well-being and Performance

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Abstract

Healthcare professionals operate in complex work environments characterised by physical demands, cognitive workload, technological requirements, psychosocial pressures, and challenging organisational conditions. These factors have important implications for employee wellbeing and the ability to maintain effective professional performance. This article examines the influence of ergonomic work design on healthcare professionals' wellbeing and performance from a broader organisational and social science perspective. It considers ergonomics not only in relation to physical workplace conditions but also as an integrated approach involving cognitive demands, work organisation, technology, workload, psychosocial conditions, and organisational support. The analysis identifies four major areas of concern: persistent physical demands and musculoskeletal risks, cognitive workload and technology related challenges, excessive workload and psychosocial strain, and limitations in organisational work design. Evidence discussed in the article indicates that poorly designed working conditions can contribute to physical strain, fatigue, burnout, information overload, reduced work ability, and difficulties in sustaining professional performance. The article proposes that healthcare organisations adopt a more integrated ergonomic approach involving systematic physical ergonomic assessment, human centred technology, appropriate workload and scheduling practices, stronger psychosocial support, and participatory ergonomic management. Overall, effective ergonomic work design can contribute to healthier working conditions while strengthening professional performance, workforce sustainability, and the overall effectiveness of healthcare organisations.

Keywords: *Ergonomics, Healthcare, Wellbeing, Workload, Performance*

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1. Introduction

Healthcare professionals operate in demanding work environments where physical, cognitive, organisational, and psychosocial conditions can directly influence their wellbeing and ability to perform effectively. Hospitals require employees to manage complex clinical responsibilities, time pressure, changing workloads, prolonged working hours, patient needs, technological systems, and frequent interactions with different professional groups. Ergonomic work design therefore extends beyond the physical arrangement of equipment and workplaces by considering how tasks, technologies, organisational structures, environmental conditions, and human capabilities interact within a work system. Carayon et al. (2006) emphasised that healthcare work systems involve interactions among individuals, tasks, tools and technologies, organisational factors, and physical environments. Dul et al. (2012) similarly positioned ergonomics as an important discipline for improving both human wellbeing and overall system performance. Within healthcare, this perspective is particularly relevant because poorly designed work systems may increase physical strain, cognitive demands, fatigue, stress, and opportunities for error. Holden et al. (2013) further demonstrated through the SEIPS 2.0 framework that healthcare outcomes can be understood through interactions between people and their work systems. Consequently, ergonomic work design should be viewed as an important management consideration for protecting healthcare professionals while supporting effective and sustainable organisational performance.

Physical demands remain an important ergonomic concern because healthcare professionals frequently perform activities involving patient handling, repetitive movements, prolonged standing, awkward postures, and movement of equipment. Nurses are particularly exposed because many routine responsibilities require substantial physical interaction with patients and the healthcare environment. Smedley et al. (1995) identified occupational factors associated with back pain among nurses, highlighting the physical demands associated with nursing work. Trinkoff et al. (2003) similarly demonstrated relationships between perceived physical demands and musculoskeletal problems among registered nurses. These occupational risks can have implications for individual wellbeing as well as organisational performance through discomfort, reduced work ability, sickness absence, and limitations in completing physically demanding activities. Hignett (2003) reviewed intervention strategies for reducing musculoskeletal injuries associated with patient handling and demonstrated the importance of ergonomic approaches in healthcare work. Waters (2007) further highlighted the need to reconsider traditional approaches to manual patient handling because physical demands can exceed safe occupational limits. Davis and Kotowski (2015) subsequently demonstrated through a systematic review and meta analysis that musculoskeletal disorders remain prevalent among nurses. These findings indicate that hospital management should consider physical ergonomics when designing tasks, selecting equipment, allocating work, and organising healthcare environments.

Cognitive ergonomics is equally significant because healthcare professionals continuously process information, make decisions, communicate with colleagues, operate technologies, and respond to changing patient conditions. Poorly designed work processes can increase mental workload and make it more difficult for employees to concentrate on important responsibilities. Interruptions represent a particularly relevant concern in hospital environments where employees frequently move between different activities and information sources. Weigl et al. (2011) demonstrated that workflow interruptions are common among hospital physicians and can create additional demands within clinical work. Such interruptions may influence concentration, workload, and the ability to manage complex tasks efficiently. Gurses et al. (2012) argued for stronger integration of human factors and ergonomics into healthcare improvement because patient safety problems often emerge from interactions among individuals, technology, tasks, and organisational systems. Carayon et al. (2014) similarly emphasised the contribution of human factors and systems engineering to healthcare quality and patient safety. From this perspective, improving performance should not depend exclusively on expecting professionals to work harder or remain constantly attentive. Instead, healthcare organisations should design work processes that reduce unnecessary complexity, improve information presentation, support communication, and make required tasks easier to perform correctly. Cognitive ergonomic design can therefore contribute simultaneously to employee wellbeing and more reliable healthcare performance.

Working time and workload represent additional dimensions of ergonomic work design because healthcare services often require continuous staffing and extended operating hours. Long shifts, inadequate recovery periods, excessive workloads, and unpredictable schedules can place substantial demands on healthcare professionals. Dall'Ora et al. (2015) found that nurses working shifts of twelve hours or longer were more likely to experience burnout, job dissatisfaction, and intentions to leave their employment. These findings demonstrate that work scheduling should be understood as an organisational design issue rather than merely an administrative

arrangement. Excessive working demands may affect employees' physical and psychological resources while limiting opportunities for adequate recovery. Bodenheimer and Sinsky (2014) argued that improving healthcare requires attention to the wellbeing of healthcare providers alongside patient experience, population health, and cost objectives. Shanafelt and Noseworthy (2017) similarly identified organisational leadership and workplace conditions as important factors in physician burnout and professional wellbeing. Work design should consequently incorporate realistic workloads, appropriate scheduling, sufficient recovery opportunities, and organisational support. By considering how working time interacts with employee capabilities and responsibilities, healthcare organisations can create conditions that support sustained professional performance without placing unnecessary demands on the physical and psychological wellbeing of healthcare workers.

Psychosocial wellbeing represents another important consideration because healthcare professionals operate within environments characterised by emotional demands, responsibility for patient outcomes, interpersonal relationships, time constraints, and organisational pressures. Prolonged exposure to these demands may contribute to stress and burnout, particularly when employees have insufficient resources or control over their work. Hall et al. (2016) found through a systematic review that poor wellbeing and burnout among healthcare staff were associated with poorer patient safety outcomes. This relationship indicates that employee wellbeing should not be treated as separate from healthcare performance. West et al. (2016) demonstrated that interventions can reduce physician burnout, while Panagioti et al. (2017) found that both individual and organisational interventions can contribute to reductions in burnout among physicians. However, organisational approaches are particularly relevant to ergonomic work design because they address the conditions under which employees perform their responsibilities. Mache et al. (2009) also demonstrated the importance of working conditions and job satisfaction among hospital physicians. These findings support a broader interpretation of ergonomics in which psychosocial factors, organisational structures, workload, employee autonomy, and workplace relationships form part of work system design. Improving these conditions can contribute to healthier healthcare workplaces and more sustainable professional performance.

Technology has transformed healthcare work and created both opportunities and challenges for ergonomic work design. Electronic health records, digital communication systems, monitoring technologies, and other clinical information systems can improve access to information and support healthcare delivery, but poorly designed technologies may increase cognitive workload, workflow disruption, and frustration. Human factors approaches emphasise that technologies should be designed around the capabilities, limitations, and actual work processes of their users. Holden et al. (2013) demonstrated that technologies form part of a wider healthcare work system and interact with individuals, tasks, organisations, and environmental conditions. Carayon et al. (2014) further argued that human factors and systems engineering can improve healthcare quality by considering these interactions systematically. Technology implementation should therefore involve more than technical functionality. Usability, workflow compatibility, information presentation, employee training, and the demands created by new systems should also be evaluated. Gurses et al. (2012) emphasised the need to integrate human factors knowledge more effectively into healthcare safety and improvement activities. When technology is aligned with actual healthcare work, it can support decision making and reduce unnecessary demands. In contrast, poor technological design may transfer additional workload to professionals and weaken the expected benefits of digitalisation.

The relationship between employee wellbeing and professional performance provides an important justification for integrating ergonomic principles into healthcare management. Healthcare professionals who experience persistent physical discomfort, excessive mental workload, fatigue, or burnout may find it increasingly difficult to sustain effective performance over time. Hall et al. (2016) identified evidence connecting poor staff wellbeing and burnout with patient safety outcomes, illustrating the wider organisational consequences of workforce conditions. Bodenheimer and Sinsky (2014) similarly argued that healthcare organisations should recognise the wellbeing of healthcare professionals as an essential component of healthcare improvement. From an ergonomic perspective, wellbeing and performance should not be considered competing objectives. Dul et al. (2012) emphasised that ergonomics can contribute simultaneously to human wellbeing and system performance when it is integrated strategically into organisational design. Healthcare management should therefore consider whether job responsibilities, technologies, physical environments, schedules, communication processes, and organisational structures enable employees to work effectively without creating avoidable physical or psychological burdens. Improvements in these areas may support job satisfaction, work ability, professional engagement, and service performance. Ergonomic work design consequently provides a useful social science perspective for understanding how organisational conditions influence both healthcare professionals and the effectiveness of healthcare organisations.

Organisational interventions are particularly important because sustainable improvement requires changes to the work environment rather than relying exclusively on individual employees to adapt to difficult conditions. Healthcare professionals can develop personal coping strategies and professional competencies, but these measures cannot fully compensate for poorly designed workloads, technologies, physical environments, or management systems. Paguio et al. (2020) systematically reviewed interventions intended to improve nurses' work environments and demonstrated the importance of organisational approaches for nurse, patient, and hospital outcomes. This reinforces the broader systems perspective advanced by Holden et al. (2013), in which healthcare work should be examined through interactions among people, tasks, technologies, organisational conditions, and physical environments. West et al. (2016) and Panagioti et al. (2017) also demonstrated that organisational interventions can contribute to improvements in professional wellbeing and reductions in burnout. By 2020, these findings provided a strong basis for positioning ergonomic work design as an important healthcare management and social science concern. Accordingly, this article examines the influence of ergonomic work design on healthcare professionals' wellbeing and performance, focusing on physical demands, cognitive workload, work organisation, psychosocial conditions, technology, and organisational support as interconnected components of healthcare work systems.

2. Literature Review

Ergonomic work design has become increasingly relevant to healthcare management because the wellbeing and performance of healthcare professionals are shaped by the interaction between employees, tasks, technologies, organisational arrangements, and the physical work environment. Rather than limiting ergonomics to posture or equipment, contemporary human factors perspectives examine the wider work system and how its components influence professional and organisational outcomes. Carayon et al. (2006) established the Systems Engineering Initiative for Patient Safety framework to explain relationships among work system characteristics, care processes, and outcomes. Holden et al. (2013) subsequently expanded this perspective through SEIPS 2.0, highlighting the dynamic relationships among people, tasks, tools, organisational conditions, environments, and work processes. More recently, Carayon et al. (2020) further developed this systems perspective to represent increasingly complex healthcare journeys. These developments provide a strong foundation for understanding ergonomic work design from a social and organisational perspective. Accordingly, this review examines four interconnected areas: physical ergonomics and occupational demands, cognitive ergonomics and healthcare technology, workload and psychosocial wellbeing, and organisational ergonomics in relation to professional and healthcare performance.

2.1 Physical Ergonomics and Occupational Demands in Healthcare

Physical ergonomics remains an important component of healthcare work design because many professionals perform tasks that involve patient handling, standing, repetitive movement, equipment manipulation, awkward postures, and physically demanding activities. Nursing work is particularly relevant because direct patient care frequently requires lifting, repositioning, transferring, and supporting individuals with different levels of mobility. Hignett (2003) demonstrated through a systematic review that interventions based only on lifting technique training were generally insufficient, while multifactor approaches based on risk assessment provided stronger potential for reducing patient handling risks. Trinkoff et al. (2003) similarly identified relationships between physical demands and musculoskeletal problems among registered nurses. Later research strengthened this concern by showing that work related musculoskeletal disorders remain a substantial occupational issue within nursing. Bernal et al. (2015) found that psychosocial and physical occupational factors can interact in influencing musculoskeletal problems among hospital nurses and nursing aides. Tariah et al. (2020) also identified lifting, awkward posture, stooping, and repetitive activities among important physical demands contributing to work related musculoskeletal disorders among nurses. These findings demonstrate that healthcare ergonomics should address the design of physical tasks rather than placing responsibility primarily on individual workers.

Reducing physical strain requires an integrated approach that considers equipment, workspace design, task organisation, staffing, and exposure to repetitive physical demands. Ergonomic assessment provides a mechanism for identifying where physical work exceeds employees' capabilities and where redesign may be necessary. McAtamney and Corlett (1993), for example, developed the Rapid Upper Limb Assessment method for identifying occupational exposure to postural risks, while David et al. (2008) developed the Quick Exposure

Check to evaluate exposure to work related musculoskeletal risks and support ergonomic intervention. Within healthcare, Hignett (2003) argued that multifactor interventions are more effective than relying exclusively on employee technique training. This is important because physical strain may result from combinations of workplace layout, equipment availability, patient characteristics, time pressure, and organisational procedures. Furthermore, occupational demands should be considered alongside workforce capacity because demanding tasks performed repeatedly over long periods can influence wellbeing and work ability. Tariah et al. (2020) reinforced the significance of prevention strategies for healthcare workers experiencing musculoskeletal risks. Therefore, effective physical ergonomic design should seek to modify the conditions under which work occurs, allowing healthcare professionals to perform essential responsibilities with less unnecessary physical burden while maintaining effective patient care.

2.2 Cognitive Ergonomics and Healthcare Technology

Cognitive ergonomics has become increasingly important as healthcare professionals are required to manage substantial volumes of information while making timely and often complex decisions. Clinical work involves monitoring patients, communicating with colleagues, reviewing records, responding to alerts, documenting care, and switching between multiple responsibilities. Interruptions can therefore increase the difficulty of maintaining concentration and managing mental demands. Weigl et al. (2011) identified workflow interruptions as a frequent feature of hospital physicians' work, particularly in intensive care and emergency environments. Subsequent research by Weigl et al. (2014) demonstrated relationships between workflow interruptions and dimensions of mental workload, particularly frustration among hospital physicians. These findings indicate that cognitive workload is partly created by how healthcare work is organised rather than simply by the inherent complexity of clinical decisions. Leonard et al. (2004) similarly emphasised communication and teamwork as fundamental components of safe healthcare delivery, illustrating the importance of designing communication systems that reduce unnecessary ambiguity and coordination problems. From a wider systems perspective, Carayon et al. (2014) argued that human factors approaches can improve healthcare quality by considering how work systems shape human performance. Cognitive ergonomic design should therefore simplify information flows and minimise avoidable interruptions while supporting effective professional judgement.

Digital technology adds another dimension to cognitive work because electronic health records and other information systems can either support or increase professional workload depending on their usability and compatibility with clinical processes. Kutney Lee et al. (2019) found that the work environment influences nurses' perceptions of electronic health record usability and the ability of these systems to support quality and safety. Kroth et al. (2019) similarly identified associations between electronic health record design, use factors, clinician stress, and burnout, although broader workload and workplace conditions also contributed substantially to these outcomes. Melnick et al. (2020) found that physicians' ratings of electronic health record usability were independently associated with burnout, providing further evidence that technology design can influence professional wellbeing. Khairat et al. (2020) additionally reported associations between electronic health record use, physician fatigue, and efficiency within an intensive care simulation environment. These studies suggest that technology should not be evaluated only according to technical capability or information availability. User interface design, workflow integration, cognitive burden, information presentation, and actual user experience are equally important. Effective ergonomic technology design should therefore support professional tasks without creating unnecessary documentation demands, mental fatigue, or additional work complexity.

2.3 Workload, Working Time and Psychosocial Wellbeing

Workload and working time are central elements of ergonomic work design because healthcare professionals frequently work within environments characterised by high demand, long shifts, irregular schedules, and limited recovery opportunities. These conditions can affect both physical and psychological wellbeing when demands consistently exceed available resources. Griffiths et al. (2014) reported that nurses working shifts of twelve hours or longer and those working overtime were more likely to report poorer quality and safety outcomes and greater levels of care left undone. Dall'Ora et al. (2015) subsequently found that longer nursing shifts were associated with greater burnout, job dissatisfaction, and intention to leave. A later review by Dall'Ora et al. (2020) identified multiple predictors of nursing burnout, including inadequate staffing, long shifts, low schedule flexibility, high workload, and poor work environments. These findings demonstrate that fatigue and burnout cannot be understood solely as personal weaknesses or individual coping problems. They are strongly influenced by the organisation and design of work. Healthcare organisations should therefore consider workload distribution, shift length,

recovery time, staffing resources, and scheduling flexibility as interconnected ergonomic factors that can influence sustainable workforce performance.

Psychosocial wellbeing is equally important because healthcare work involves emotional demands, professional responsibility, interpersonal relationships, and pressure to maintain high standards under uncertain conditions. Hall et al. (2016) found evidence of associations between poor healthcare staff wellbeing, burnout, and patient safety, demonstrating that employee wellbeing can have implications extending beyond the individual worker. Tawfik et al. (2018) similarly reported associations among physician burnout, fatigue, work unit safety, and major medical errors. West et al. (2018) identified workload, inefficient work processes, work related stress, and organisational culture among important contributors to physician burnout. Evidence concerning interventions further suggests that organisational conditions should receive substantial attention. Panagioti et al. (2017) found that interventions addressing physician burnout produced beneficial effects, with organisational approaches providing important opportunities for improvement. Cummings et al. (2018) also demonstrated that relational leadership styles were associated with more favourable nursing workforce and work environment outcomes than leadership approaches focused predominantly on task completion. Together, these findings support a social science interpretation of ergonomics in which psychological wellbeing, leadership, relationships, workload, organisational support, and job design are interconnected components of healthcare work.

2.4 Organisational Ergonomics, Wellbeing and Professional Performance

Organisational ergonomics provides a broader perspective by examining how work structures, management practices, communication, staffing, technologies, and organisational processes interact to influence employee and system outcomes. Healthcare services depend on coordinated work across different occupations, departments, technologies, and locations, making system level design particularly important. Carayon et al. (2006) demonstrated through the SEIPS model that healthcare outcomes emerge from relationships among people, tasks, technologies, organisational factors, and physical environments. Holden et al. (2013) expanded this framework by emphasising that work systems influence processes that subsequently affect professional, organisational, and patient outcomes. Such a perspective shifts attention away from blaming individual healthcare professionals when problems occur and instead encourages examination of the conditions within which work is performed. Leadership is also important within this organisational environment. Shanafelt and Noseworthy (2017) identified organisational leadership as an important influence on physician wellbeing, while Cummings et al. (2018) found strong evidence supporting relational leadership for improving nursing workforce and work environment outcomes. Therefore, ergonomic work design should be integrated with management practices, organisational culture, communication processes, resource allocation, and employee participation rather than being treated as a narrow occupational safety activity.

Sustainable improvement ultimately requires organisations to redesign problematic working conditions instead of relying primarily on healthcare professionals to adapt continuously to excessive demands. Paguio et al. (2020) reviewed interventions designed to improve nurses' work environments and identified organisational strategies with potential benefits for nurses, patients, and hospitals. This supports the argument that improving wellbeing requires attention to the structure and organisation of healthcare work. Carayon et al. (2020) further extended the SEIPS approach by recognising that healthcare processes increasingly occur across complex journeys, reinforcing the importance of human centred systems design. At the employee level, better ergonomic design can support physical comfort, manageable cognitive demands, appropriate workloads, and more effective interactions with technologies and colleagues. At the organisational level, these conditions can contribute to more reliable work processes, workforce stability, productivity, and quality of service. Hall et al. (2016) demonstrated that healthcare staff wellbeing is associated with patient safety outcomes, while Tawfik et al. (2018) connected physician burnout and fatigue with safety related outcomes. Consequently, ergonomic work design should be regarded as a strategic organisational approach capable of supporting healthcare professionals' wellbeing while strengthening sustainable individual and organisational performance.

3. Current Issues in Ergonomic Work Design for Healthcare Professionals

Healthcare organisations continue to face significant challenges in creating work environments that support both professional wellbeing and effective performance. Increasing physical demands, cognitive workload,

technological complexity, long working hours, staffing pressures, and psychosocial stress can affect how healthcare professionals perform their responsibilities. Research available by 2020 indicates that poor work design is associated with musculoskeletal problems, fatigue, burnout, technology related workload, and concerns surrounding patient safety and service quality (Hall et al., 2016; Melnick et al., 2020; Dall'Ora et al., 2020). These concerns demonstrate that ergonomics in healthcare should extend beyond physical workplace design to include cognitive, psychosocial, technological, and organisational factors. The following issues correspond directly with the four areas identified in the literature review and highlight important barriers to achieving healthier and more effective healthcare work systems.

3.1 Persistent Physical Demands and Musculoskeletal Risks

Physical workload remains a major ergonomic issue because healthcare professionals frequently perform tasks that expose them to repetitive movements, prolonged standing, awkward postures, patient handling, and physically demanding work. Nurses are particularly vulnerable because their responsibilities often involve repositioning, transferring, lifting, and supporting patients while simultaneously managing equipment and other clinical activities. Trinkoff et al. (2003) demonstrated that physical demands in nursing are associated with musculoskeletal problems, while Hignett (2003) found that patient handling risks cannot be effectively addressed through manual lifting instruction alone. More recent evidence confirms that these physical challenges continue despite increasing awareness of occupational ergonomics. Tariah et al. (2020) identified lifting, awkward postures, stooping, repetitive activities, and prolonged working positions as important contributors to work related musculoskeletal disorders among nurses. The persistence of these problems indicates that many healthcare workplaces may still depend excessively on employees adapting physically to poorly designed tasks. Physical strain can also become more difficult when employees face time pressure, limited equipment availability, inadequate staffing, or restricted opportunities for recovery. Consequently, the central concern involves not only the physical demands of healthcare work but also whether workplace systems are appropriately designed to reduce unnecessary occupational exposure.

Another difficulty concerns the tendency to address physical ergonomic problems through individual behaviour rather than comprehensive work redesign. Training healthcare professionals to use appropriate body movements can contribute to occupational awareness, but training alone cannot remove risks created by unsuitable equipment, limited workspace, repetitive workloads, or inappropriate task arrangements. Hignett (2003) demonstrated that multifactor ergonomic interventions provide a stronger basis for addressing patient handling risks than approaches focusing exclusively on lifting techniques. Ergonomic assessment tools can also assist organisations in identifying problematic postures and physical exposure. McAtamney and Corlett (1993) developed the Rapid Upper Limb Assessment method to evaluate postural risks, while David et al. (2008) introduced the Quick Exposure Check as a practical approach for assessing musculoskeletal risk factors in workplace settings. However, assessment provides limited value if organisations do not translate findings into changes involving equipment, workspaces, staffing, task allocation, and workflow. Physical ergonomic risks therefore represent both an occupational health concern and an organisational design issue. Healthcare management must recognise that sustainable improvement requires changes to the conditions under which physical tasks are performed rather than relying primarily on individual employees to compensate for demanding workplace environments.

3.2 Cognitive Workload and Technology Related Challenges

Increasing dependence on information technology has introduced new cognitive demands into healthcare work. Professionals are required to manage electronic health records, digital communication, alerts, clinical information, documentation, and multiple systems while simultaneously maintaining attention to patient needs. Although these technologies can improve information accessibility, poorly designed systems may increase mental workload and create additional tasks. Workflow interruptions further complicate this environment because healthcare professionals frequently switch between competing responsibilities. Weigl et al. (2011) identified frequent interruptions within hospital physicians' work and demonstrated the importance of examining their effects on clinical workflow. Communication and coordination problems can create additional cognitive pressures because healthcare delivery depends on the timely exchange of accurate information among multiple professionals. Leonard et al. (2004) emphasised that effective communication and teamwork are essential to safe healthcare practice. Human factors perspectives therefore challenge the assumption that errors or reduced performance result primarily from individual inattention. Yusof et al. (2020) argued that healthcare outcomes should be understood

through interactions among people, tasks, technologies, organisations, and environments. Excessive cognitive demands may consequently arise when work systems require professionals to manage unnecessary interruptions, fragmented information, complicated interfaces, or competing tasks within limited periods.

Electronic health record usability illustrates how technological design can affect both professional performance and wellbeing. Digital systems designed without sufficient consideration of user requirements may create excessive documentation, complex navigation, repeated information entry, and difficulties accessing relevant information. Melnick et al. (2020) found that physician ratings of electronic health record usability were independently associated with burnout, indicating that technology experience can have meaningful implications for professional wellbeing. Khairat et al. (2020) also reported high levels of fatigue among intensive care physicians during electronic health record simulation and identified a negative association between fatigue and system efficiency. Information overload represents an additional concern, particularly when professionals receive large numbers of electronic notifications. Research available before 2020 identified electronic inbox workload as a contributor to information overload, job dissatisfaction, and physician burnout. These findings demonstrate that technological implementation should not be regarded as successful simply because a digital system is available. Healthcare organisations must consider whether technologies improve actual work processes or unintentionally transfer additional cognitive demands to healthcare professionals, thereby weakening the expected benefits of digitalisation.

3.3 Excessive Workload, Long Working Hours and Psychosocial Strain

Heavy workload and extended working hours remain significant organisational ergonomic concerns because healthcare services require continuous staffing and professionals frequently work under demanding schedules. Long shifts can reduce opportunities for physical and psychological recovery while increasing cumulative fatigue. Griffiths et al. (2014) found that nurses working shifts of twelve hours or longer were more likely to report poorer patient safety and quality outcomes as well as greater levels of care left undone. Dall'Ora et al. (2015) subsequently demonstrated that nurses working twelve hour shifts or longer had greater likelihood of experiencing emotional exhaustion, depersonalisation, reduced personal accomplishment, job dissatisfaction, and intentions to leave. These findings indicate that working time arrangements can affect both employee wellbeing and organisational outcomes. The problem becomes more complex when long shifts occur alongside staff shortages, overtime, high patient demand, or insufficient breaks. Dall'Ora et al. (2020) identified high workload, low staffing, long shifts, and limited control as recurring job characteristics associated with nursing burnout. Consequently, workload should be treated as a fundamental component of work design rather than as an unavoidable characteristic of healthcare employment.

Psychosocial pressures create additional concerns because healthcare professionals must manage emotional demands, professional responsibility, interpersonal relationships, uncertainty, and expectations for consistently high quality performance. When these demands are combined with insufficient organisational support, employees may experience persistent stress and burnout. Hall et al. (2016) found evidence linking healthcare staff wellbeing and burnout with patient safety outcomes, demonstrating that employee wellbeing has implications for the wider healthcare system. Burnout may also affect safety perceptions and professionals' willingness to report incidents, as demonstrated by Halbesleben et al. (2008). Leadership and workplace relationships can either reduce or intensify these pressures. Cummings et al. (2018) showed that leadership styles are associated with nursing workforce and work environment outcomes, reinforcing the importance of organisational relationships in employee wellbeing. These findings suggest that healthcare organisations should not approach stress and burnout exclusively as personal coping problems. Psychosocial strain frequently reflects broader weaknesses in workload allocation, leadership, communication, staffing, employee control, and organisational support. Effective ergonomic work design must therefore recognise psychological and social conditions as integral components of healthcare work.

3.4 Organisational Work Design and Sustainable Professional Performance

Fragmented approaches to ergonomics represent a broader challenge because physical, cognitive, psychosocial, technological, and organisational demands frequently interact within the same healthcare work system. Improving an individual workstation or introducing new equipment may produce limited benefits when employees continue to experience excessive workloads, weak communication, difficult technologies, or inadequate organisational support. Carayon et al. (2006) conceptualised healthcare work as a system involving interactions among people,

tasks, technologies, organisational structures, and physical environments. Holden et al. (2013) further developed this systems perspective through SEIPS 2.0, emphasising how work systems shape professional activities and outcomes. Such approaches suggest that ergonomic problems should not be addressed independently because changing one component may create consequences elsewhere. Interprofessional collaboration provides a relevant example. Reeves et al. (2017) observed that poor collaboration can negatively affect professional practice and healthcare delivery, demonstrating the significance of social and organisational interactions within healthcare systems. Healthcare organisations therefore face the challenge of coordinating work design across departments, professions, technologies, and management structures rather than implementing isolated ergonomic interventions that address only visible symptoms of wider organisational problems.

Sustaining professional performance presents a further concern because healthcare organisations depend on employees maintaining their capabilities over extended periods rather than achieving short term productivity at the expense of wellbeing. Excessive physical demands, cognitive workload, burnout, and poor organisational conditions may eventually affect workforce stability, professional effectiveness, and quality of service. Research has consistently linked healthcare professional burnout with safety related quality concerns. Panagioti et al. (2017) found evidence that interventions can reduce physician burnout, with organisational approaches offering an important route for addressing working conditions. Hall et al. (2016) similarly demonstrated associations between staff wellbeing and patient safety, while Cummings et al. (2018) highlighted the role of leadership in shaping nursing workforce and workplace outcomes. These relationships indicate that employee wellbeing and professional performance should not be managed as competing priorities. Ergonomic work design requires healthcare organisations to create conditions where professionals can perform effectively without continuous exposure to avoidable physical, cognitive, or psychosocial demands. A systems based organisational approach is therefore necessary to achieve sustainable improvements in both workforce wellbeing and healthcare performance.

4. Discussion on Ergonomic Work Design, Wellbeing and Healthcare Performance

Ergonomic work design provides an important foundation for understanding how healthcare organisations can simultaneously support workforce wellbeing and professional performance. The challenges identified in physical workload, cognitive demands, working time, technology use, and psychosocial conditions demonstrate that employee performance cannot be separated from the environment in which healthcare work is performed. A systems perspective is particularly relevant because physical, cognitive, technological, and organisational conditions continuously interact within healthcare settings. Carayon et al. (2014) emphasised that human factors and systems approaches are critical for improving healthcare quality and patient safety, while Holden et al. (2013) demonstrated that interactions among people, tasks, technologies, organisations, and environments shape healthcare work processes and outcomes. Consequently, effective ergonomic management requires more than isolated interventions directed at individual employees. Healthcare organisations should examine how work structures and resources can be designed to reduce unnecessary demands while enabling professionals to maintain effective and sustainable performance.

4.1 Improving Physical Work Design to Support Occupational Wellbeing

Reducing physical ergonomic risks requires healthcare organisations to redesign the conditions surrounding demanding tasks rather than expecting professionals to continuously adapt to physically difficult work. Patient handling, repetitive movement, prolonged standing, awkward postures, and equipment manipulation remain common features of healthcare employment, particularly within nursing. These demands can become more problematic when physical activities are performed repeatedly under time pressure or with inadequate equipment and staffing support. Hignett (2003) demonstrated that interventions addressing patient handling should extend beyond manual lifting instruction and incorporate broader ergonomic risk management. Research on work related musculoskeletal disorders has similarly shown that physical occupational exposures remain significant contributors to health problems among workers (da Costa & Vieira, 2010). More recent evidence available in 2020 continued to demonstrate a high prevalence of musculoskeletal problems among nurses, particularly involving the lower back and other lower body regions (Almhdawi et al., 2020). These findings suggest that physical ergonomics should be incorporated into healthcare management decisions involving workspace configuration, equipment selection, patient handling procedures, staffing arrangements, and task distribution.

Such integration can reduce unnecessary physical exposure while enabling professionals to perform essential responsibilities more safely and efficiently.

A preventive approach to physical ergonomics also requires organisations to identify workplace risks before they result in persistent discomfort, absence, or reduced work ability. Ergonomic assessment methods can support this process by identifying problematic postures, repetitive activities, excessive force, and unsuitable task arrangements. However, assessment should lead to practical modifications rather than functioning only as a compliance exercise. Physical work design may need to incorporate appropriate patient handling technologies, adjustable equipment, improved access to frequently used materials, and better organisation of movement within clinical environments. The systems perspective developed by Carayon et al. (2006) reinforces this requirement because work performance emerges from interactions among people, tasks, tools, technologies, organisations, and environments. A physical task may therefore remain difficult even when an employee uses appropriate technique if equipment availability, workplace layout, staffing, or time allocation is inadequate. Ergonomic improvement should consequently examine the complete circumstances surrounding physically demanding work. By designing healthcare tasks according to human capabilities and limitations, organisations can improve occupational wellbeing while maintaining productivity, reducing avoidable physical strain, and creating more sustainable conditions for long term professional performance.

4.2 Managing Cognitive Demands Through Human Centred Technology and Work Processes

Managing cognitive workload requires greater attention to how information, interruptions, communication, and digital technologies are incorporated into healthcare work. Clinical professionals frequently need to process multiple information sources while monitoring patients, documenting care, communicating with colleagues, responding to alerts, and making time sensitive decisions. When work processes are fragmented or technologies require excessive attention, cognitive resources may be diverted from activities that require professional judgement. Human factors research challenges approaches that attribute performance problems primarily to individual concentration or competence. Carayon et al. (2014) argued that healthcare quality and safety depend substantially on the design of the wider work system. Similarly, Hoonakker et al. (2011) identified nursing workload as an important worker stress and patient safety concern within intensive care environments. These perspectives indicate that cognitive workload should be managed through improved work design rather than relying on healthcare professionals to absorb increasing information demands. Organisations should therefore examine whether communication procedures, documentation processes, task sequences, and information systems reduce or increase unnecessary complexity during professional work.

Electronic health records provide a particularly important example of the relationship between technology design and employee wellbeing. Melnick et al. (2020) found that more favourable physician ratings of electronic health record usability were independently associated with lower odds of burnout, demonstrating that system usability has implications beyond technical performance. Khairat et al. (2020) similarly reported that fatigue among intensive care physicians was negatively associated with electronic health record efficiency during simulated work. Information overload also deserves attention because excessive electronic notifications can increase workload, dissatisfaction, and burnout among clinicians. Research on electronic inbox workload identified the need to improve information system design and workflow to reduce unnecessary burden (Murphy et al., 2019). These findings suggest that healthcare technologies should be assessed according to usability, task compatibility, information presentation, and their effects on cognitive workload. A human centred approach should involve healthcare professionals in system evaluation and redesign so that technological tools support clinical work instead of introducing additional mental demands that weaken wellbeing and professional performance.

4.3 Redesigning Workload and Working Time to Protect Psychosocial Wellbeing

Workload and working time require careful management because sustained professional performance depends on employees having sufficient resources and opportunities for recovery. Healthcare organisations often operate continuously, making shift work unavoidable in many roles, but the organisation of shifts can significantly influence employee wellbeing. Dall'Ora et al. (2015) found that nurses working shifts of twelve hours or longer were more likely to experience emotional exhaustion, depersonalisation, reduced personal accomplishment, job dissatisfaction, and intentions to leave than those working shorter shifts. Evidence available by 2020 further

strengthened the relationship between adverse working conditions and burnout. Dall'Ora et al. (2020) identified high workload, low staffing levels, long shifts, and limited control as recurring job characteristics associated with nursing burnout. A systems modelling study by Farid et al. (2020) also demonstrated how long shifts and extended working weeks can substantially increase nurse fatigue and burnout. Taken together, these findings indicate that excessive workload should not be viewed simply as a normal requirement of healthcare employment. Scheduling, staffing, work allocation, rest opportunities, and employee control over working arrangements represent important components of ergonomic work design.

Psychosocial wellbeing is also shaped by the relationship between job demands and the organisational resources available to healthcare professionals. High responsibility and emotional demands may be difficult to eliminate, but organisations can influence staffing support, communication, leadership, job control, and access to necessary resources. Xian et al. (2020) found that work resources can influence the relationship between job demands and burnout among nurses, reinforcing the importance of organisational support when demands are high. Evidence from staffing research also demonstrates that workplace conditions have important consequences for both employees and patients. Aiken et al. (2002) found that increasing patient loads were associated with greater odds of nurse burnout and job dissatisfaction as well as poorer patient outcomes. These relationships demonstrate why employee wellbeing and organisational performance should not be treated as competing priorities. Excessive demands that produce short term productivity may weaken sustainable performance when they contribute to fatigue, burnout, dissatisfaction, or turnover. Ergonomic work design should therefore aim to create a more appropriate balance between professional demands and the staffing, time, autonomy, and organisational resources available to healthcare employees.

4.4 Developing an Integrated Ergonomic Work System for Sustainable Performance

Sustainable healthcare performance requires ergonomic principles to be integrated across organisational systems rather than implemented through isolated workplace improvements. Physical discomfort, cognitive workload, difficult technologies, poor communication, staffing constraints, and psychosocial pressures can occur simultaneously and reinforce one another. The SEIPS framework developed by Carayon et al. (2006) provides an important basis for understanding these interactions by positioning people, tasks, technologies, organisational factors, and environments as interconnected components of healthcare work. Holden et al. (2013) extended this perspective through SEIPS 2.0 and highlighted the dynamic relationships between work systems, processes, and outcomes. Such frameworks suggest that organisations should avoid addressing ergonomic problems only after individual workers experience difficulties. Instead, ergonomic principles should be incorporated into work design, technology procurement, staffing decisions, process improvement, workplace planning, and employee participation. Carayon (2013) similarly emphasised macroergonomics as a systems based approach that considers the organisational and sociotechnical context surrounding healthcare activities. This wider perspective provides a stronger basis for achieving improvements that support both employee wellbeing and organisational effectiveness.

Organisational participation is particularly important because healthcare professionals possess practical knowledge about difficulties encountered during everyday work. Ergonomic interventions are more likely to address actual problems when employees participate in identifying demanding tasks, technology issues, workflow barriers, and opportunities for improvement. Stab et al. (2020) highlighted the potential of participative, human centred approaches to improving work organisation and reducing workload within hospital environments. Human factors and ergonomics research also demonstrates that system redesign can contribute to healthcare quality and patient safety when physical, cognitive, and organisational factors are considered together. A systematic review of healthcare redesign identified applications addressing multiple human factors and ergonomics dimensions across healthcare settings. Carayon et al. (2018) further identified substantial opportunities for broader implementation of human factors and systems engineering within patient safety improvement. Therefore, ergonomic work design should be positioned as a strategic organisational responsibility rather than a narrow occupational safety intervention. Integrating employee participation, human centred technology, appropriate workload, physical work design, and organisational support can strengthen professional wellbeing while providing a more sustainable foundation for healthcare performance.

5. Strategic Recommendations for Warehouse Excellence and Integration

Improving ergonomic work design requires healthcare organisations to consider the physical, cognitive, psychosocial, technological, and organisational conditions under which professionals perform their responsibilities. Ergonomic improvement should not be limited to correcting individual working practices because many occupational demands originate from the wider design of tasks, technologies, schedules, workplaces, and organisational systems. Evidence demonstrates that work environment interventions can influence healthcare professionals as well as patient and hospital outcomes (Paguio et al., 2020). A more comprehensive approach should therefore integrate ergonomic principles into workplace planning, technology implementation, workload management, employee participation, and organisational improvement. The following recommendations focus on reducing physical ergonomic risks, developing human centred technologies and work processes, improving workload and psychosocial conditions, and establishing an integrated ergonomic management system that supports sustainable healthcare performance.

5.1 Strengthen Physical Ergonomic Assessment and Workplace Redesign

Healthcare organisations should conduct systematic ergonomic assessments to identify physical demands that may unnecessarily expose professionals to musculoskeletal risks. Particular attention should be given to patient handling, repetitive activities, prolonged standing, awkward postures, equipment movement, and workplace arrangements that require excessive reaching, bending, or physical effort. Hignett (2003) demonstrated that interventions addressing patient handling risks should extend beyond manual lifting instruction and incorporate broader ergonomic approaches. Similarly, da Costa and Vieira (2010) identified several physical occupational exposures associated with work related musculoskeletal disorders, reinforcing the importance of addressing workplace conditions rather than concentrating solely on employee behaviour. Ergonomic assessment methods such as the Rapid Upper Limb Assessment developed by McAtamney and Corlett (1993) and the Quick Exposure Check developed by Yusof et al. (2020) can provide structured approaches for identifying problematic physical exposures. Healthcare organisations should use assessment findings to redesign tasks, equipment placement, workspace arrangements, and movement patterns. Employees who regularly perform these tasks should also participate in identifying practical difficulties because they possess direct knowledge of how physical demands occur during daily work. A systematic assessment process can consequently support more targeted ergonomic interventions and reduce avoidable physical strain.

Physical redesign should also be supported through appropriate equipment, staffing, and work organisation because workplace modifications alone may not eliminate demanding conditions. Patient handling equipment and adjustable workplace facilities should be readily available and positioned where professionals can use them without creating additional delays or complexity. Waters (2007) emphasised the importance of moving away from traditional manual patient lifting approaches because the physical demands associated with such activities can exceed acceptable occupational limits. Davis and Kotowski (2015) further demonstrated through a systematic review and meta analysis that musculoskeletal disorders remain highly prevalent among nurses, indicating the continuing importance of prevention. Organisational policies should therefore encourage the use of appropriate equipment while ensuring that employees receive adequate training and time to use it effectively. Staffing arrangements should also be considered because physically demanding tasks may become more difficult when professionals work under severe time pressure or insufficient workforce support. Ergonomic improvement should consequently combine equipment, task redesign, training, staffing, and appropriate workplace organisation. This integrated approach can strengthen physical wellbeing while enabling healthcare professionals to perform demanding responsibilities more safely and consistently.

5.2 Develop Human Centred Technology and Cognitive Work Processes

Healthcare organisations should adopt a human centred approach when designing, selecting, and implementing digital technologies because technological effectiveness depends substantially on how well systems correspond with users' cognitive requirements and actual work processes. Electronic health records, clinical information platforms, communication technologies, and decision support systems should facilitate professional activities without creating excessive navigation, duplication, information overload, or unnecessary mental workload. Melnick et al. (2020) demonstrated that perceived electronic health record usability was independently associated with physician burnout, indicating that technology design can influence professional wellbeing. Greater attention should therefore be given to usability, information presentation, workflow compatibility, and documentation

requirements. Zayas-Cabán and White (2020) similarly emphasised the importance of integrating human factors and ergonomics principles into health information technology to improve system design and healthcare outcomes. Healthcare professionals should consequently participate in technology selection, testing, implementation, and evaluation because their practical experience can identify problems that may not become apparent during technical development. Zhou et al. (2019) further demonstrated that facilitating conditions influence nurses' adoption of hospital electronic information management systems. Continuous user involvement can therefore strengthen technology acceptance while ensuring that digital systems support rather than complicate professional work.

Reducing cognitive burden also requires healthcare organisations to improve information flows, communication processes, system usability, and the management of workplace interruptions. Healthcare professionals frequently move between patient care, documentation, communication, clinical information systems, and other responsibilities, making poorly organised digital environments particularly demanding. Weigl et al. (2011) demonstrated that workflow interruptions are common within hospital physicians' work, illustrating the importance of examining how competing activities affect concentration and workload. Leonard et al. (2004) similarly emphasised effective communication and teamwork as fundamental to safe healthcare delivery. Digital technology should consequently simplify communication rather than create additional layers of notifications and fragmented information. Zhang et al. (2020) highlighted the importance of systematic usability assessment when evaluating health related technologies, including attention to user experience, efficiency, effectiveness, and interaction with technological interfaces. Zayas-Cabán and White (2020) further argued that human factors and ergonomics should play a central role in the development and implementation of health information technology. Healthcare organisations should therefore regularly evaluate alerts, documentation procedures, information displays, communication channels, and technology related workload. Better cognitive work design can reduce unnecessary mental demands while allowing healthcare professionals to concentrate more effectively on essential professional responsibilities.

5.3 Improve Workload, Scheduling and Psychosocial Support

Healthcare organisations should review workload and scheduling practices to ensure that professional demands remain manageable over extended periods. Long shifts and excessive workloads may produce short term staffing advantages but can create negative consequences for employee wellbeing and workforce sustainability. Dall'Ora et al. (2015) found that nurses working shifts of twelve hours or longer were more likely to experience burnout, job dissatisfaction, and intentions to leave. More recent evidence from Dall'Ora et al. (2020) identified high workload, low staffing, long shifts, and limited control as important characteristics associated with nursing burnout. Work scheduling should therefore consider shift duration, overtime, recovery periods, staffing levels, workload intensity, and employee participation in scheduling decisions. Healthcare organisations should also monitor departments where excessive workload becomes persistent rather than temporary. Workload assessment can help management determine whether staffing resources correspond with actual service requirements. Appropriate workload management should not be interpreted simply as reducing employee responsibilities. Instead, it involves distributing work more effectively and ensuring that available resources allow healthcare professionals to perform their responsibilities without continuous exposure to excessive demands.

Psychosocial support should be integrated with workload improvement because professional wellbeing is influenced by both job demands and organisational resources. Healthcare professionals cannot always avoid emotional and psychological demands associated with patient care, but organisations can strengthen the resources available to manage these responsibilities. Xian et al. (2020) demonstrated that work resources play an important role in the relationship between job demands and burnout among nurses. Management should therefore strengthen communication, supervisor support, teamwork, employee participation, role clarity, and access to appropriate workplace resources. Leadership practices also deserve attention because supportive relationships can influence how employees experience their working environment. Cummings et al. (2018) found that relational leadership approaches were associated with more favourable nursing workforce and work environment outcomes. In addition, Panagioti et al. (2017) demonstrated that interventions can reduce physician burnout and highlighted the value of organisational approaches. Healthcare organisations should consequently avoid treating burnout exclusively as an individual coping problem. Improving workload, leadership, job control, communication, and organisational support provides a stronger approach because it addresses workplace conditions that can contribute to psychosocial strain.

5.4 Establish an Integrated and Participatory Ergonomic Management System

Healthcare organisations should establish a comprehensive ergonomic management system that connects physical, cognitive, technological, psychosocial, and organisational aspects of work. Isolated interventions may produce limited improvements when other components of the work system continue to create excessive demands. The SEIPS framework developed by Carayon et al. (2006) provides an appropriate foundation because it considers interactions among people, tasks, tools and technologies, organisational factors, and physical environments. Holden et al. (2013) subsequently extended this perspective through SEIPS 2.0, demonstrating the importance of understanding how work systems influence healthcare processes and outcomes. Ergonomic principles should therefore be incorporated into organisational planning, technology procurement, workplace design, staffing decisions, quality improvement, and employee development. Management should regularly evaluate whether changes in one part of the system create new demands elsewhere. For example, introducing new technology may improve information availability while simultaneously increasing documentation workload. A systems based approach allows organisations to examine these interactions before problems become embedded within everyday practice. Ergonomic management should consequently become a continuing organisational responsibility rather than an occasional response to occupational problems.

Employee participation should become a central element of this ergonomic management approach because healthcare professionals possess practical knowledge about the demands and limitations of their work. Their involvement can help management identify physical difficulties, inefficient processes, technology problems, communication barriers, and workload pressures that may not be visible through administrative performance indicators alone. Paguio et al. (2020) systematically reviewed interventions aimed at improving nurses' work environments and demonstrated that organisational interventions can influence nurse, patient, and hospital outcomes. This supports the importance of treating workplace improvement as a strategic organisational responsibility. Human factors principles further emphasise that systems should be designed around the characteristics and needs of the people performing the work (Carayon et al., 2014). Healthcare organisations should therefore establish regular mechanisms through which professionals can contribute to ergonomic assessment, technology evaluation, workflow redesign, and workplace improvement. Feedback should also be followed by visible organisational action where appropriate so that employee participation becomes meaningful. Integrating workforce participation with systematic ergonomic evaluation can create healthier work environments while supporting professional performance, organisational learning, workforce sustainability, and healthcare quality.

6. Conclusion

Ergonomic work design represents an important organisational approach for supporting the wellbeing and performance of healthcare professionals. Healthcare work involves a combination of physical demands, cognitive responsibilities, technological requirements, workload pressures, and psychosocial challenges. These conditions do not operate independently but interact within the wider healthcare work system. As discussed throughout this article, physical strain associated with patient handling, repetitive activities, prolonged standing, and awkward postures can affect occupational wellbeing, while cognitive workload, frequent interruptions, complex information flows, and poorly designed technologies can create additional demands. Working conditions involving long shifts, high workloads, insufficient recovery opportunities, and psychosocial pressures may further contribute to fatigue, stress, burnout, and reduced work ability. Therefore, ergonomic work design should extend beyond physical workplace arrangements and incorporate cognitive, technological, psychosocial, and organisational dimensions of healthcare work.

Effective ergonomic management also requires healthcare organisations to recognise that sustainable professional performance depends considerably on the conditions under which employees perform their responsibilities. Expecting healthcare professionals to continuously adapt to demanding work environments provides only a limited response to problems that originate from task design, technology, staffing, scheduling, communication, and organisational systems. A broader systems perspective provides a stronger foundation because it considers the interactions among employees, tasks, technologies, organisational arrangements, and physical environments. The article consequently emphasises the importance of physical ergonomic assessment, human centred

technology, manageable workload and scheduling practices, psychosocial support, and greater employee participation in workplace improvement. This approach is consistent with the wider understanding of ergonomics as a means of simultaneously supporting human wellbeing and system performance.

Ultimately, improving ergonomic work design should be considered a continuing management responsibility rather than a temporary response to workplace problems. Healthcare organisations should systematically identify demanding working conditions and develop practical improvements that correspond with the capabilities and needs of healthcare professionals. Greater attention to physical ergonomics, cognitive workload, technology usability, work organisation, and psychosocial conditions can create healthier and more supportive working environments. At the organisational level, these improvements have the potential to strengthen workforce stability, productivity, quality of service, and sustainable performance. The article therefore concludes that integrating ergonomic principles into healthcare management can create mutual benefits for healthcare professionals and organisations. By designing work around human capabilities while maintaining operational requirements, healthcare organisations can establish a more sustainable foundation for professional wellbeing and effective performance.

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