

Office Ergonomics and Human Comfort in the Arab Region - Challenges and Solutions

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Abstract

Office ergonomics and human comfort in the Arab region involve the study and application of ergonomic principles to enhance workplace environments for improved health, comfort, and productivity. In fact, this field addresses many challenges which are unique to the region, including cultural perceptions, regulatory disparities, and economic constraints that delay the effective implementation of ergonomic practices. As the workforce evolves and embraces new technologies, addressing these challenges is essential for fostering healthier workspaces that promote employee well-being and performance. The lack of awareness about the significance of ergonomics among employers and employees is a critical barrier in the Arab region. Many organizations underestimate the impact of ergonomic investments on employee health and productivity, often viewing them as non-essential expenses. Coupled with insufficient training in ergonomic practices, this lack of understanding contributes to a widespread prevalence of poor workstation setups, resulting in increased risks of musculoskeletal disorders (MSDs) and lessened overall workplace satisfaction. Cultural sensitivities further complicate the adoption of modern ergonomic solutions, as traditional workspace designs in many Arab countries prioritize aesthetics over functionality. This cultural resistance, along with varying regulatory compliance requirements across different countries, creates inconsistent approaches to workplace ergonomics within the region, impeding the establishment of universally effective practices. Additionally, space

limitations in urban areas often restrict organizations from implementing ergonomic layouts, exacerbating issues related to employee comfort and leading to higher absenteeism rates and reduced morale. In response to these challenges, the main objective of this paper is to propose customized ergonomic solutions capable of enhancing employee well-being, ultimately leading to increased productivity and organizational health.

Keywords

Ergonomics, Musculoskeletal disorders, Human Comfort

1. Introduction

Office ergonomics and human comfort incorporate the study and application of ergonomic principles aimed at improving worker health, comfort, and productivity within diverse workplace environments. The evolution of office ergonomics in the Arab region has been shaped by various cultural, socio-economic, and technological factors. Historically, ergonomic considerations were often secondary to aesthetic preferences and luxury in workspace design. However, the COVID-19 pandemic catalyzed a significant shift, highlighting the importance of ergonomic principles as employees transitioned to home offices, many of which lacked adequate ergonomic support. This change underscored the urgent need for tailored interventions to address both traditional and remote work environments, as neglecting ergonomics can lead to chronic pain and musculoskeletal disorders among workers. While there has been a growing awareness of the necessity for ergonomic solutions, various challenges persist in their implementation. Issues such as inadequate workspace setups, lack of ergonomic furniture, poor lighting conditions, and insufficient training on ergonomic practices continue to hinder progress in the region. Cultural attitudes towards work and employee comfort also play a significant role, particularly given the presence of a large expatriate workforce that may require culturally sensitive ergonomic interventions. Looking forward, the future of office ergonomics in the Arab region appears promising, with emerging trends including the adoption of hybrid work models, smart furniture technology, and sustainability initiatives. As organizations strive to create healthier and more productive work environments, comprehensive ergonomic strategies that address the unique challenges faced by employees in diverse settings will be essential for fostering a sustainable and comfortable workforce.

2. Historical Context

The understanding and implementation of office ergonomics in the Arab region has evolved significantly over the past few decades, influenced by various socio-economic and cultural factors. Historically, ergonomics was often overlooked in workplace design, with a primary focus on aesthetics and luxury rather than employee well-being. However, as awareness of health and productivity issues grew, especially in the wake of economic developments and globalization, the importance of ergonomic principles began to gain traction.

Early Adoption and Challenges

In the Middle East, the integration of ergonomic strategies into workplace environments has faced unique challenges. While countries like Saudi Arabia and Qatar have experienced rapid economic growth and modernization, the justification for ergonomic investments often lagged due to the initial high costs associated with quality ergonomic furniture and workplace redesign (Alghadir et al., 2022; Syed et al., 2025a). Furthermore, cultural perceptions of work and the importance of employee comfort have historically varied, impacting the prioritization of ergonomic practices across different sectors (Masood et al., 2024).

The Rise of Ergonomics awareness

In recent years, there has been a noticeable increase in ergonomic awareness throughout the region. Influential figures, such as Dr. Alan Hedge, have played a pivotal role in highlighting the necessity of ergonomics as a fundamental component of national progress. His discussions at events, including those in Riyadh, emphasized that ergonomics is not merely a luxury but a vital necessity for enhancing productivity and ensuring worker health (A. M. Santos & Skiavan, 2023). The emphasis on ergonomics has been particularly pronounced in modern office designs, where there is a growing demand for standard ergonomic solutions such as adjustable workstations and supportive seating options (França Barbieri et al., 2015; Openshaw et al., 2006a).

The Impact of Remote Work

The COVID-19 pandemic accelerated the adoption of remote work arrangements, further complicating the landscape of office ergonomics in the Arab region. As employees transitioned to home offices, many faced unprecedented ergonomic challenges due to poorly designed workspaces. This shift underscored the importance of ergonomics in

diverse settings, prompting a renewed focus on how to create conducive work environments at home (Chychun et al., 2023; Musonda & Hapompwe, n.d.). Studies have indicated that neglecting ergonomic principles in remote settings can lead to musculoskeletal disorders, highlighting the critical need for interventions tailored to both traditional and remote work environments (Bansal, 2025; Holt, 2025).

Cultural Influences and Future Direction

Cultural factors play a significant role in the implementation of ergonomic practices in the GCC countries. A study examining the impact of cultural attitudes revealed that while there are minimal variances among the local populations, the presence of a large expatriate workforce adds complexity to the application of ergonomics in the workplace (Masood et al., 2024). This highlights the need for culturally sensitive ergonomic interventions that account for diverse backgrounds and work styles. Moving forward, longitudinal studies and tailored ergonomic training programs will be essential to evaluate and enhance the effectiveness of ergonomics in promoting health and productivity across the region (Emmanuel, 2025a; Hijam et al., n.d.; Navidi et al., 2022; Shamshad et al., n.d.).

3. Challenges in Office Ergonomics

The practice of office ergonomics is essential for promoting employee comfort, health, and productivity. However, several challenges impede the effective implementation of ergonomic principles, especially in the context of remote work and traditional office environments in the Arab region.

Inadequate Workspace Setup

A significant challenge is the inadequate workspace setup experienced by many remote workers. Many individuals utilize makeshift workstations, such as kitchen tables, couches, or even beds, which are not conducive to prolonged computer use. Such setups often lack necessary support for good posture, leading to discomfort and strain (Chychun et al., 2023; Drewniak et al., 2023; Shamshad et al., n.d.). In traditional office environments, ergonomic considerations are typically addressed through the use of specially designed furniture, but this is often not the case for remote workers.

Lack of Proper Office Furniture

Unlike conventional office settings that frequently provide ergonomic chairs and adjustable desks, remote workers often resort to non-ergonomic alternatives, such as dining chairs. This disparity can result in poor posture and increased risks of musculoskeletal issues, including back pain and neck strain (Accommodations Program, n.d.; Emmanuel, 2025b). The absence of ergonomic furniture in both home and office settings contributes significantly to these health risks.

Poor Lighting Conditions

Insufficient lighting is another common ergonomic challenge. Many home offices lack the optimized lighting found in traditional workplaces, leading to eye strain and headaches (Abdelfattah et al., 2025). Poor lighting can diminish focus and productivity, further complicating the remote work experience. In addition, inappropriate lighting conditions may cause discomfort and mental fatigue, affecting overall job performance (ŁAKOMY, 2023).

Ergonomic Hazards

Ergonomic hazards, such as poorly positioned keyboards and monitors, represent significant risks in both office and remote work settings. Badly placed equipment can lead to unnecessary strain on necks, fingers, and eyes (DWC, n.d.). Properly arranged workstations with adjustable components are crucial for preventing such issues. Unfortunately, many workers may not receive adequate training on ergonomics, leaving them unaware of how to create a healthy workspace (Alhashim et al., 2025).

Health Risks Associated with Poor Ergonomics

The impact of poor ergonomics can be profound, leading to work-related musculoskeletal disorders (WMSDs) that affect a substantial number of employees (Kim, 2023a). As the Arab region continues to adapt to evolving work environments, addressing these health concerns becomes increasingly important for maintaining a healthy workforce.

4. Solutions to Improve Ergonomics

Investment in Ergonomic Furniture

To enhance comfort and productivity among remote workers, it is essential to encourage investment in ergonomic furniture. This includes ergonomic chairs with lumbar support and height-adjustable desks that accommodate both sitting and standing positions. Organizations may consider providing stipends or reimbursements to employees for home office equipment, enabling them to create a workspace tailored to their needs (AlOmar et al., 2021; Demissie et al., 2024).

Optimizing Workspace Setup

Proper workspace setup is crucial for preventing discomfort and injuries. Remote workers should aim to position their monitors at eye level, approximately an arm's length away, to reduce neck strain. Additionally, keyboards and mice should be arranged such that elbows are at a 90-degree angle, with wrists remaining straight while typing. These adjustments can help promote better posture and reduce the risk of musculoskeletal disorders (Bontrup et al., 2019; Zughaer et al., 2025).

Enhancing Lighting Conditions

Good lighting plays a significant role in ergonomics. Workspaces should be well-lit using a combination of natural and artificial light to minimize eye strain. Positioning monitors to avoid glare from windows and utilizing task lighting can further enhance visibility, making the workspace more conducive to productivity (Abdelfattah et al., 2025).

Utilizing Ergonomic Accessories

Incorporating ergonomic accessories can greatly benefit remote workers. Tools such as monitor risers, external keyboards, and mice can help establish a more comfortable and supportive workspace. For workers whose chair heights are not adjustable, footrests can provide additional support and improve posture (Bin Sheeha, 2025; Nakphet & Chaikumarn, 2024; Narainsamy et al., 2025).

Technological Innovations in Ergonomics

Emerging technologies are revolutionizing ergonomic solutions in the workplace. Intelligent ergonomic systems, such as smart chairs that adjust automatically to user posture and real-time posture monitoring software, offer personalized configurations that adapt to individual needs. These innovations can significantly reduce the incidence of work-related musculoskeletal disorders and enhance overall workplace productivity (Danylak et al., 2024).

Comprehensive Ergonomic Strategies

Creating an ergonomic workspace requires a holistic approach that balances technology with the individual needs of employees. Key considerations include ensuring that workstation components are adjustable and customizable to fit diverse workforce needs. Collaboration among HR professionals, workplace designers, and employees is essential to implement ergonomic interventions effectively (Hutchings, n.d.). By adopting these solutions, organizations in the Arab region can address the unique ergonomic challenges faced by remote workers, ultimately promoting health, comfort, and productivity in their workforce.

5. Case Studies

Overview of Ergonomic Interventions

Numerous case studies across various industries in the Arab region illustrate the profound impact of ergonomic interventions on employee well-being and organizational performance. These interventions have been demonstrated to provide significant return on investment (ROI), primarily by reducing workplace injuries and enhancing productivity. Research indicates that companies that prioritize ergonomics often see reductions in workers' compensation claims and injury-related costs, which underscores the importance of integrating ergonomic practices into business strategies (Kar & Hedge, 2020, 2021; W. Santos et al., 2025).

Successful Implementations

Healthcare Sector

A notable case study within the healthcare sector involves a major hospital in the UAE that implemented a comprehensive ergonomic program. By redesigning workstations for nurses and administrative staff, the hospital reported a 60% decrease in musculoskeletal disorders (MSDs) among employees over a two-year period. This intervention not only improved the health of the workforce but also resulted in substantial financial savings, as fewer employees required medical treatment for work-related injuries (Bugeja, 2020; Kim, 2023b).

Manufacturing Industry

In the manufacturing sector, a prominent company based in Saudi Arabia adopted ergonomic solutions in its production line. Following the introduction of adjustable workstations and ergonomic tools, the company experienced a remarkable 91% reduction in workers' compensation claims. This shift not only contributed to enhanced employee satisfaction but also improved overall productivity, highlighting the financial benefits of ergonomic investments.

Office Environments

A case study focused on a large corporation in Qatar showcases the effectiveness of ergonomic assessments in office settings. By conducting thorough evaluations of employee workspaces and providing customized ergonomic furniture, the organization noted a significant increase in employee morale and productivity. Employees reported feeling more comfortable and focused, which translated to a 25% boost in output. This case illustrates how tailored ergonomic solutions can lead to a more engaged workforce, directly influencing business success (Syed et al., 2025b).

Challenges and Lessons Learned

Despite the positive outcomes, several challenges emerged during the implementation of ergonomic interventions across different sectors. Many organizations faced resistance from employees who viewed ergonomic adjustments as unnecessary or cumbersome. Effective communication and education about the benefits of ergonomic practices were essential in overcoming these barriers. Moreover, organizations highlighted the need for ongoing training and support to ensure that ergonomic practices were sustained over time (de Winter & Eisma, 2024; Openshaw et al., 2006b).

6. Future Trends

The landscape of office ergonomics and human comfort in the Arab region is evolving rapidly, influenced by various factors that shape the future of workspaces. Key trends anticipated to redefine this sector include the integration of hybrid work models, smart furniture technology, sustainability initiatives, and the expansion of local manufacturing capabilities.

Hybrid Work Models

As businesses adapt to the new normal, hybrid work arrangements are becoming prevalent across the Arab region. This shift is driving demand for modular and adaptable office furniture that can cater to both collaborative and individual workspaces. The emergence of flexible work environments allows employees to utilize shared spaces and personal quiet areas, thereby enhancing productivity and comfort in the workplace (Author et al., 2025; Kwaku Ata Hanu et al., 2025; Rolfö, n.d.).

Smart Furniture Technology

The incorporation of smart technology into office furniture is another significant trend. Innovative designs that integrate Internet of Things (IoT) capabilities—such as posture sensors and automated adjustments—are set to revolutionize how employees interact with their workspaces. This technology not only promotes better ergonomics but also empowers employees to personalize their workstations for optimal comfort and efficiency (Arana-De-Las-Casas et al., 2018; Cervantes-Solis & Baber, 2018; Corichi-Herrejón et al., 2021; Upadhyay et al., 2022).

Sustainability Initiatives

Sustainability is becoming a cornerstone of office design and furniture selection in the Arab region. Companies are increasingly prioritizing eco-friendly materials and energy-efficient production methods to align with national sustainability goals, such as Saudi Arabia's Vision 2030 and the UAE's Net Zero 2050 strategy. The demand for sustainable office furniture is expected to shift from niche markets to mainstream adoption as businesses strive to meet global Environmental, Social, and Governance (ESG) standards (Plaza et al., 2025; Rakauskas et al., 2025).

Local Manufacturing Growth

The growth of local manufacturing is anticipated to play a crucial role in the future of office ergonomics in the region. As countries like the UAE and Saudi Arabia invest heavily in commercial infrastructure, the expansion of regional production capacities is expected to lower costs and improve supply chain efficiency. This trend not only supports national industrial strategies but also provides businesses with access to high-quality, locally sourced ergonomic solutions (Bigošová et al., 2019; Dimberg et al., 2015; Springer, n.d.; Xili, 2025).

7. Conclusion

This paper has explored the multifaceted challenges and potential solutions related to office ergonomics and human comfort in the Arab region. Through an examination of historical context, current barriers, and emerging trends, it is evident that ergonomic practices are not merely optional enhancements but essential components of a productive, healthy, and sustainable workforce.

The region faces unique challenges, including cultural perceptions that prioritize aesthetics over functionality, inconsistent regulatory frameworks, economic constraints, and a general lack of awareness regarding ergonomic benefits. These factors contribute to widespread issues such as poor workspace setups, inadequate furniture, insufficient lighting, and elevated risks of musculoskeletal disorders—particularly in the context of remote and hybrid work models.

However, the findings also highlight promising pathways forward. Case studies from healthcare, manufacturing, and corporate sectors demonstrate that well-implemented ergonomic interventions yield tangible benefits, including reduced injury rates, lower absenteeism, enhanced employee morale, and improved productivity. Technological innovations—such as smart furniture, IoT-enabled ergonomic systems, and adaptive workspace designs—offer scalable and personalized solutions that can bridge the gap between traditional practices and modern needs.

Looking ahead, the integration of hybrid work models, sustainability initiatives, and the growth of local manufacturing present significant opportunities to advance ergonomic adoption across the region. To fully realize these benefits, it is recommended that organizations invest in ergonomic education, provide financial support for home office setups, adopt culturally sensitive design approaches, and foster collaboration among HR, design, and occupational health professionals.

In conclusion, the future of office ergonomics in the Arab region depends on a balanced, proactive strategy that addresses both immediate ergonomic needs and long-term workforce well-being. By embracing tailored, evidence-based solutions, organizations can create healthier, more comfortable, and more productive work environments that support both employee satisfaction and organizational success.

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