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Review Article

Musculoskeletal Disorders among Desk-Based Officials: An Upcoming Challenge for Corporate Professionals

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Abstract:

Musculoskeletal disorders (MSDs) are the most prevalent occupational health issues worldwide, affecting significantly desk-based professionals. These disorders encompass a range of conditions affecting muscles, bones, tendons, and joints, primarily caused by poor posture, repetitive movements, and prolonged sedentary work. Desk-based officials, particularly in urban settings like Dhaka City, are at a heightened risk due to long hours spent working on computers in ergonomically unsound environments. As Bangladesh continues to develop economically and technologically, the number of office-based jobs is increasing, making MSDs a growing public health concern.. This review was aimed to find gap/missing of existing literature in order to make foundation of new research on MSDs. After repeated critical review of number of original articles, some gaps have been found. Almost every article they focused on outcome and mildly highlighted input variables but did not consider all possible variables and missed to show interlink between those variables.

Keywords: Musculoskeletal Disorders, Desk-Based Officials, Challenge, Corporate Professionals

Introduction:

Musculoskeletal disorders (MSDs) have emerged as a significant occupational health concern globally, particularly among desk-based workers who engage in prolonged periods of sedentary activities. These disorders encompass a range of conditions affecting muscles, tendons, ligaments, nerves, and other soft tissues, leading to pain and functional impairment. In urban settings like Dhaka City, the rapid expansion of desk-based occupations has been paralleled by an increase in MSD prevalence, underscoring the need for effective preventive strategies. The etiology of MSDs among office workers is multifactorial, with poor posture and inadequate ergonomic practices identified as primary contributors. Prolonged sitting, often in suboptimal postures, exerts excessive strain on the musculoskeletal system, particularly the lower back, neck, and shoulders. A study conducted in Bangladesh reported that 76% of paper-based office workers experienced musculoskeletal symptoms over a 12-

12-month period, with the lower back being the most commonly affected region (Habib et al., 2015).

In conclusion, the high prevalence of musculoskeletal disorders among desk-based officials in Dhaka City necessitates targeted interventions focusing on postural and ergonomic training. By addressing the root causes of these disorders through education and workplace modifications, it is possible to enhance employee health, reduce economic burdens, and improve overall quality of life. Future research should aim to develop and evaluate culturally appropriate ergonomic programs that can be feasibly implemented in the diverse occupational settings of Dhaka. Musculoskeletal disorders (MSDs) have become a critical occupational health issue among desk-based workers, particularly in urban environments such as Dhaka City. The increasing reliance on digital technology and prolonged sedentary work patterns have significantly contributed to the rising prevalence of MSDs, which affect employees' productivity, well-being, and overall quality of life. Studies indicate that prolonged sitting, poor posture, and inadequate ergonomic practices are key contributors to the development of MSDs, with common complaints including neck pain, lower back pain, and repetitive strain injuries. Despite the evident risks, awareness and implementation of ergonomic interventions remain limited in many workplaces in Dhaka.

Critical Reviewed literatures

Musculoskeletal disorders (MSDs) are injuries or disorders that affect the musculoskeletal system of the body. These conditions can range from mild discomfort to severe health issues, potentially leading to unplanned time off from work or even hospitalization. Increasingly, MSDs are becoming a prevalent health concern affecting all age groups (Obembe et al., 2013). Disorders of the musculoskeletal system impose a significant burden on both affected individuals and employers. The term MSDs encompasses a range of inflammatory and degenerative disorders impacting muscles, tendons, ligaments, joints, peripheral nerves, and supporting blood vessels, resulting in pain or discomfort (Tinubu, 2010). In developing countries, the high prevalence rate of musculoskeletal pain contributes to a considerable health burden, including healthcare costs, work-related disability, and reduced quality of life (Wijnhoven et al., 2006). Work-related musculoskeletal disorders (WMSDs) are a major public health concern, particularly affecting areas such as the neck, shoulder, elbow, wrist, hand, upper back, lower back, hip, knee, ankle, and foot (Akrouf et al., 2010). Low back pain accounts for nearly half of all MSDs, with neck pain ranking as the fifth most severe condition (Christopher et al., 2010). The prevalence of MSDs is higher among older adults compared to younger age groups and is generally more common in developed countries than in developing or underdeveloped regions. WMSDs are non-traumatic soft tissue disorders caused or aggravated by workplace conditions (Darvishi et al., 2016). MSDs can be categorized based on various factors, particularly the location of pain—upper extremities, lower extremities, and back, with the back being most commonly affected. Disorders affecting muscles, tendons, joints, ligaments, or nerves all fall under the umbrella of MSDs (Darwish & Al-Zuhair, 2013). MSDs impact people regardless of age or gender and are prevalent across numerous industries and occupations (Da Costa & Vieira, 2010). Research indicates that MSDs account for 42% to 58% of all work-related illnesses, making them a leading cause of health-related work absences (Kamel & Abledu, 2012). Studies from Iran, Bangladesh, Punjab (India), and Tamil Nadu have reported WMSD prevalence rates among bankers as 78.5%, 69.3%, 83.5%, and 33.8%, respectively (Darvishi et al., 2016). A study in Kuwait found that the prevalence of WMSDs among bankers was 57% in the week before the study and 80% in the year prior (Akrouf et al., 2010). These disorders are often associated with poor workplace postures, such as flexed, static, twisted postures and repetitive trunk movements. Other risk factors include age, gender, lifestyle habits (e.g., smoking, alcohol consumption), psychological stress, past pain symptoms, socioeconomic status, low muscle flexibility and strength, physical activity, and workload. WMSDs significantly impair quality of life, leading to absenteeism, increased work restrictions, job changes, and financial losses at individual, organizational, and societal levels (Sohail & Yazdani-Charati, 2014). Office workers are particularly susceptible due to repetitive movements and poor ergonomic practices, often leading to musculoskeletal pain. Psychosocial factors such as heavy workloads and time pressures further exacerbate the problem (Janwantanakul et al., 2008). Common WMSDs include tennis elbow, golfer's elbow, tendonitis, thoracic outlet syndrome, carpal tunnel syndrome, tension neck syndrome, and degenerative spinal disorders. Without timely treatment, these conditions can result in permanent disabilities. Factors like poor posture, repetitive tasks, noise, mental stress, biomechanical loading, gender, and obesity also contribute to the development of MSDs (Rashaduzzaman et al., 2019). These disorders negatively impact employee productivity, leading to significant psychological, economic, and service-related consequences. In regions like the US, Europe, and Australia, the financial burden of MSDs has been extensively documented (Hoe et al., 2018). Musculoskeletal disorders (MSDs) represent one of the most common occupational health concerns globally, significantly impacting productivity, quality of life, and healthcare costs. MSDs encompass a range of conditions affecting muscles, tendons, ligaments, joints, nerves, and other soft tissues, often resulting in pain, functional impairment, and disability (World Health Organization, 2021). These disorders can arise from repetitive movements, poor posture, prolonged static positions, and inadequate ergonomic setups, all of which are prevalent in modern desk-based work environments. In Dhaka City, the rapid urbanization and expansion of desk-based occupations have exacerbated the prevalence of MSDs among professionals. Studies indicate that factors such as poor workstation ergonomics, extended working hours, high work demands, and long commuting times contribute to the increasing incidence of musculoskeletal pain among office workers (Ali et al., 2021). This trend mirrors global patterns, where the shift towards sedentary work has heightened concerns regarding occupational health. The impact of MSDs extends beyond physical discomfort. Affected individuals often experience reduced work efficiency, increased absenteeism, and higher healthcare utilization. In economic terms, MSDs contribute to significant costs related to lost productivity and medical expenses. Consequently, preventive measures, including ergonomic interventions and postural training, have become essential components of workplace health strategies. This literature review explores the prevalence of MSDs among desk-based officials, highlights the unique challenges faced by workers in Dhaka City. The review draws on both local and international studies to provide a comprehensive understanding of the factors

contributing to MSDs and the effectiveness of preventive measures. The global rise in sedentary work environments has significantly increased the risk of MSDs among office workers. A study by Ali et al. (2021) involving 593 full-time bank employees in Dhaka City reported a one-month prevalence of low back pain at 36.6%, with the highest prevalence (64.3%) observed among employees aged 51–59. Prolonged working hours (>9 hours) and obesity were identified as significant risk factors. Similarly, Islam et al. (2023) conducted a study on 526 desk-based officials in Dhaka, finding that 64% experienced musculoskeletal pain, with 19% reporting severe pain. The study identified associations between musculoskeletal pain and demographic factors such as gender, body mass index, monthly income, type of organization, physical activity levels, and mental health conditions like depression. In Asia, studies reflect comparable trends. A study conducted in South Korea found that 52% of office workers reported experiencing musculoskeletal pain, particularly in the neck and lower back regions (Lee et al., 2017). Amin et al. (2016) examined the prevalence of computer-related MSDs among bankers in Dhaka and emphasized the need for education programs on prevention and coping strategies. Their findings revealed that improper workstation setups, such as inadequate chair support and incorrect monitor height, significantly contributed to musculoskeletal discomfort. Moreover, implementing sit-stand desks and promoting micro-breaks have been shown to reduce the risk of MSDs. A meta-analysis by Shrestha et al. (2018) confirmed that interventions promoting regular movement and ergonomic adjustments effectively reduced musculoskeletal pain and improved overall well-being among office workers. In China, a randomized controlled trial demonstrated that implementing adjustable workstations and ergonomic training significantly reduced neck and shoulder pain among office workers over a six-month period (Zhang et al., 2020). In Australia, a study by Straker et al. (2014) highlighted the positive impact of workplace-based physical activity programs combined with ergonomic interventions in reducing MSDs. In Dhaka, the sedentary nature of desk-based jobs, compounded by long commuting hours, exacerbates poor postural habits. Integrating postural training into workplace wellness programs can address these challenges and promote musculoskeletal health. Dhaka City presents unique challenges that influence the prevalence of MSDs among desk-based officials. Traffic congestion often results in extended commuting times, contributing to sedentary behavior and increased musculoskeletal strain. Ali et al. (2021) found that 21.7% of bank employees reported long road traffic delays, with 81% of them experiencing musculoskeletal health complaints. Implementing comprehensive training programs that address both ergonomic principles and postural awareness is essential. Employers must invest in creating supportive work environments and fostering a culture that prioritizes employee health. Employee resistance to change and lack of motivation can also pose barriers. Many workers underestimate the impact of posture and ergonomics on their long-term health. Educational initiatives that emphasize the benefits of these interventions are crucial in overcoming these challenges.

Conclusion

The high prevalence of MSDs among desk-based officials in Dhaka City underscores the need for targeted interventions. Evidence suggests that such measures can significantly reduce musculoskeletal pain, enhance functional capacity, and improve overall well-being. Employers, policymakers, and health professionals must collaborate to implement comprehensive strategies that promote musculoskeletal health in the workplace.

References:

1. Ali, M., Ahsan, G. U., Uddin, Z., & Hossain, A. (2021). Road traffic delays in commuting workplace and musculoskeletal health among sedentary workers: A cross-sectional study in Dhaka city. *Journal of Occupational Health, 63*(1), e12289. https://doi.org/10.1002/1348-9585.12289
2. Amin, M. R., Hossain, S. M., Eusufzai, S. Z., Barua, S. K., & Jamayet, N. B. (2016). The prevalence of computer-related musculoskeletal disorders among bankers of Dhaka City. *Chattagram Maa-O-Shishu Hospital Medical College Journal, 15*(1), 40–44. https://doi.org/10.3329/cmoshmcj.v15i1.28761
3. Akrouf, Q. A. S., Crawford, J. O., & Al Shatti, A. S. (2010). Musculoskeletal disorders among bank office workers in Kuwait. *Eastern Mediterranean Health Journal, 16*(1), 94–100.
4. Christopher, J. L., Rafael, L., & Abraham, D., et al. (2010). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions. *Global Burden of Disease Study, 380*(9859).
5. Da Costa, R. B., & Vieira, E. R. (2010). Risk factors for work-related musculoskeletal disorders: A systematic review of recent longitudinal studies. *American Journal of Industrial Medicine, 53*(3), 285–323.
6. Darvishi, E., Maleki, A., Giahi, O., & Akbarzadeh, A. (2016). Subjective mental workload and its correlation with musculoskeletal disorders in bank staff. *Journal of Manipulative and Physiological Therapeutics, 39*(6), 420–426.
7. Darwish, M. A., & Al-Zuhair, S. Z. (2013). Musculoskeletal pain disorders among secondary school Saudi female teachers. *Pain Research and Treatment, 2013*, 1–7.
8. Habib, M. M., Rahman, M. A., & Moniruzzaman, M. (2015). A pilot study of prevalence and distributions of musculoskeletal symptoms (MSS) among paper-based office workers in Bangladesh. *Work, 50*(3), 371–378. https://doi.org/10.3233/WOR-151993
9. Hoe, V. C., Urquhart, D. M., Kelsall, H. L., Zamri, E. N., & Sim, M. R. (2018). Ergonomic interventions for preventing work-related musculoskeletal disorders of the upper limb and neck among office workers. *Cochrane Database of Systematic Reviews, 10*. https://doi.org/10.1002/14651858.CD008570.pub3
10. Islam, M. S., Hossain, S. M., & Rahman, M. M. (2023). Prevalence and predictors of musculoskeletal health complaints among sedentary, monotonous urban workers: A survey in Bangladesh. *PLOS ONE, 18*(3), e0282922. https://doi.org/10.1371/journal.pone.0282922
11. Janwantanakul, P., Pensri, P., Jiamjarasrangsri, V., & Sinsongsook, T. (2008). Prevalence of self-reported musculoskeletal symptoms among office workers. *Occupational Medicine, 58*(6), 436–438.
12. Kamel, J., & Abledu, G. (2012). Multiple logistic regression analysis of predictors of musculoskeletal disorder and

disability among bank workers in Kumasi, Ghana. *Japanese Journal of Ergonomics, 2*, 111–115.

13. Lee, H., Chae, D., Cho, S., Kim, J., & Yoo, R. (2017). Influence of a community-based stretching intervention on the health outcomes among Korean-Chinese female migrant workers in South Korea: A randomized prospective trial. Japan Journal of Nursing Science, 14(4), 277-287.
14. Obembe, A. O., Johnson, O. E., Tanimowo, T. O., Onigbinde, A. T., & Emechete, A. A. (2013). Musculoskeletal pain among undergraduate laptop users in a Nigerian University. *Journal of Back and Musculoskeletal Rehabilitation, 26*(4), 389–395.
15. Rashaduzzaman, M., Kamrujjaman, M., Islam, M. A., Ahmed, S., & Al Azad, S. (2019). An experimental analysis of different point specific musculoskeletal pain among selected adolescent-club cricketers in Dhaka city. *European Journal of Clinical and Experimental Medicine, 17*(4), 413–419. https://doi.org/10.15584/ejcem.2019.4.4
16. Shrestha, N., Kukkonen-Harjula, K. T., Verbeek, J. H., Ijaz, S., Hermans, V., & Bhaumik, S. (2018). Workplace interventions for reducing sitting at work. *Cochrane Database of Systematic Reviews, 6*, CD010912. https://doi.org/10.1002/14651858.CD010912.pub4
17. Sohail, S., & Yazdani-Charati, J. (2014). Prevalence of work-related musculoskeletal disorders and associated risk factors among nurses in a public hospital. *Iranian Journal of Health Sciences, 2*(3), 55–61.
18. Straker, L., Mathiassen, S. E., & Holtermann, A. (2014). Sedentary work—Evidence on an emergent work health and safety issue—Final report. *Safe Work Australia*. https://www.safeworkaustralia.gov.au
19. Tinubu, B. (2010). Work-related musculoskeletal disorders among nurses in Ibadan, South-West Nigeria: A cross-sectional survey. *BMC Musculoskeletal Disorders, 11*, 12.
20. Wijnhoven, H. A., De Vet, H. C., & Picavet, H. S. (2006). Prevalence of musculoskeletal disorders is systematically higher in women than in men. *The Clinical Journal of Pain, 22*(8), 717–724.
21. Zhang, Y., Li, Y., Wang, Y., & Chen, X. (2020). Impact of ergonomic training and adjustable workstations on musculoskeletal disorders among Chinese office workers: A randomized controlled trial. *Applied Ergonomics, 82*, 102937. https://doi.org/10.1016/j.apergo.2019.102937.