

A scoping review : factors associated with musculoskeletal disorder in Bank Employees

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ABSTRACT

Musculoskeletal Disorders (MSD) are a common issue among bank employees that can significantly impact their health and productivity. This research adopts a scoping review methodology, focusing on international journals related to the Analysis of Factors Associated with Bank Employees' Musculoskeletal Disorders (MSDs). Data from various studies reveal that the body areas most frequently affected by MSDs in the banking sector are the neck, lower back, and shoulders. Factors such as non-ergonomic working postures, improper computer usage, job-related stress, repetitive tasks, and insufficient breaks play pivotal roles in elevating the risk of MSDs. In efforts to mitigate these risks, the implementation of ergonomic training stress management, as well as a proactive prevention and regular monitoring approach within the banking work environment, becomes imperative. These findings offer insights into the elevated risk of MSDs in bank workers, providing a foundation for initiatives to enhance their well-being and work quality.

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INTRODUCTION

Musculoskeletal Disorders (MSD) are highly prevalent in occupations that involve intensive manual activities, such as manufacturing, construction, or services. Employees in a bank are a group of workers who can be affected in terms of their job capabilities and health by specific job-related activities (Castagna et al., 2021; Esteves et al., 2020; Price, 2021). Musculoskeletal Disorders are common conditions among the working-age population, affecting the passive structures (bones, joints) and active body structures (muscles, tendons, ligaments, peripheral nerves). Given that MSDs account for a significant portion of occupational diseases recognized worldwide, numerous efforts have been made to identify potential risk factors in the development of MSDs and their prevention in the workplace (Cento et al., 2022; Gubert & Hannan, 2021; Matsakas & Narkar, 2010; Momken et al., 2011).

Analysis of daily tasks indicates that experienced bank employees spend their time primarily on calculations, prolonged sitting, or other activities (Khanna & Maini, 2013; Michailidis & Georgiou, 2005). These activities often involve frequent bending and twisting of the body in the sagittal or lateral planes, static postures, and prolonged periods in the same position (Abdelsalam

et al., 2023; Attar, 2014). Working with static arm conditions is considered a significant risk factor for clinically verified shoulder disorders or severe prolonged pain (Andersen et al., 2002; Miranda et al., 2005). In a study on the working conditions of bank employees, the most hazardous factors for health are repetitive movements, uncomfortable working postures, and uncomfortable temperatures. These same factors, along with mental stress, are reported to lead to work-related illnesses. MSD is a significant reason for sick leave, accounting for around 16% to 21% of the total.

Studies show that bank employees leave their jobs primarily for health reasons. Complaints related to the musculoskeletal system are the most frequently mentioned. It is necessary to measure the frequency of MSDs, disability or injuries, identify potential risk factors for these health consequences, and implement effective preventive or rehabilitative measures. It is the first attempt to systematically map the current research conditions in these aspects by synthesizing empirical studies, measurement-based research, or interventions in bank employment.

The theoretical foundation involves an understanding of MSDs, risk factors associated with this condition, and its impact on bank employees (Merkeb Alamneh et al., 2022; Punnett & Wegman, 2004; Valachi & Valachi, 2003). In the context of bank employees, the theoretical foundation includes an understanding of work involving prolonged sitting, repetitive activities, and physical burdens that can increase the risk of MSDs. These factors will be the primary focus of the research to comprehend how employment contributes to the occurrence of MSDs. The purpose of the study is to pinpoint the risk factors for MSDs in bank workers.

RESEARCH METHOD

The research design used in this study is a scoping review. The subjects of this research are international journals related to the Examination of Risk Factors for Musculoskeletal Disorders (MSDs) in Bank Workers. The research sample comprises 31 research articles from international journals that pertain to how musculoskeletal disorders (MSDs) affect bank workers. The inclusion criteria used in this study are articles originating from the Pubmed and Springer Link databases.

Table 1. Database and keywords

Database	Keyword and Query
Pubmed, Google Scholar	Keywords: ("MSD"[Mesh]) AND ("bank employee"[Mesh]) Filter: Adult)
Springer Link	Keywords: (Musculoskeletal Disorders (MSDs)), Filter: Discipline: Medicine and Health Subdiscipline: Health

The articles were selected based on publications published between 2013 and 2023, written in English. The exclusion criteria are as follows: articles needing complete text or not in English or Indonesian, articles published before 2019, articles with unclear publication sources, research results unrelated to health impacts, and articles needing ISSN or ISBN. The eligibility criteria for this research are based on the PICOS criteria (population, intervention/exposure, outcome, study): The population in this research does not consist of adult bank employees. The exposure in this research is not MSD. The outcomes evaluated in this research are not related to MSD. This research is not an observational study.

RESULTS AND DISCUSSIONS

Based on the search results with the keywords mentioned above, there were 40 articles from PubMed, 35 articles from Springer, and 25 articles from Google Scholar. The next step involved reviewing the abstracts. After reviewing the abstracts of the 100 selected articles, 30 articles were excluded as they were not related to Musculoskeletal Disorders (MSDs) in Bank Employees.

Seventy articles were included in the next step, the review of full texts. After searching for the full texts of the 70 selected articles, the articles that didn't fit the requirements were eliminated. Ten articles were chosen for inclusion in the analysis (Figure 1).

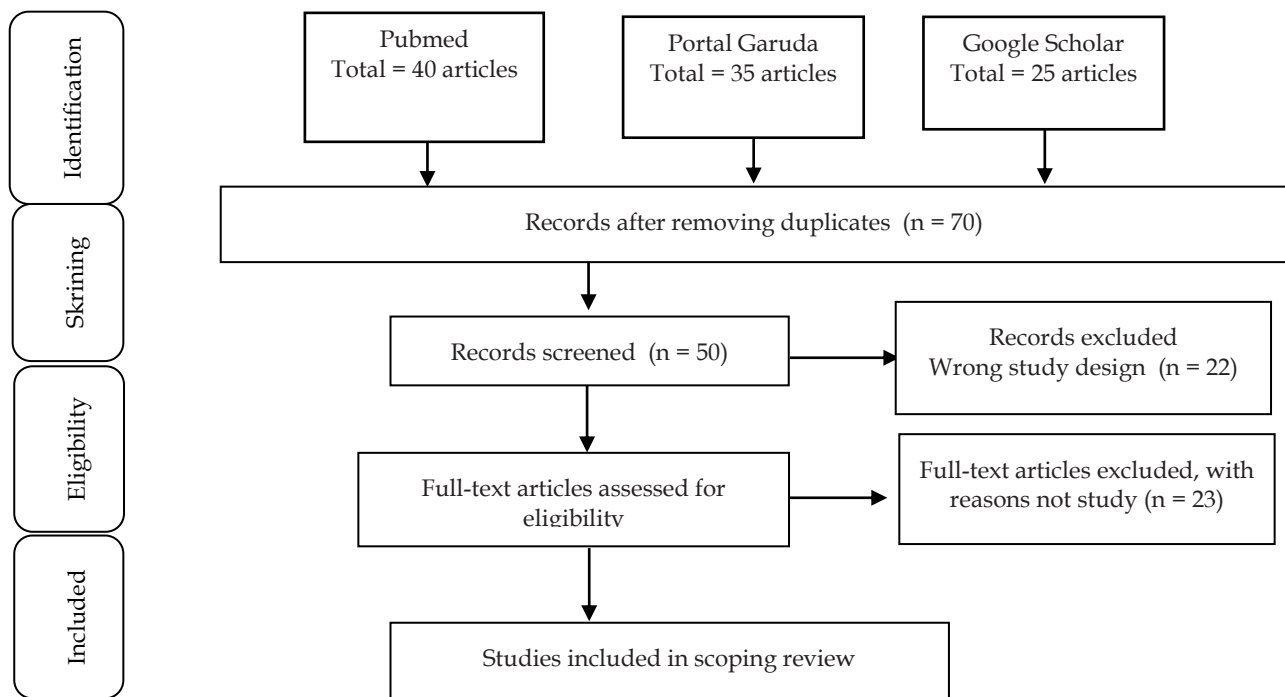


Figure 1. Flow diagram

Table 2. Summary of selected studies Analysis of Factors Associated with Musculoskeletal Disorders (MSDs) in Bank Employees

Study	Research topic	Discoveries	Result
(Etana et al., 2021)	Prevalence of Work Related Musculoskeletal Disorders and Associated Factors Among Bank Staff in Jimma City, Southwest Ethiopia, 2019: An Institution-Based Cross-Sectional Study.	Work experience, alcohol consumption, awkward posture, working in the same position for two hours or more, and job stress are significantly associated with musculoskeletal disorders in bank employees.	The most affected body parts were lower back 181 (54%), neck 152 (45.4%), upper back 143 (42.7%), and shoulder 127 (37.9%). Work experience [AOR: 2.16, 95% CI: 1.05–4.43], alcohol consumption [AOR: 3.44, 95% CI: 1.29–9.18], awkward posture [AOR: 4.09, 95% CI: 2.20–7.61], working in the same position for two or more hours [AOR: 2.02, 95% CI: 1.05–3.89] and job stress [AOR: 3.20, 95% CI: 1.67–6.15] were factors associated with work-related musculoskeletal disorders.
(Kaur & Nat, 2021)	Prevalence of Work-Related Musculoskeletal	This study examined the prevalence of Work-Related	Results-56.66% of respondents reported

	Disorders (WMSD's) among Bank Employees of Patiala (Preliminary Study)	Musculoskeletal Disorders (WMSD) in bank employees and reported a high prevalence of issues in the neck, lower back, and shoulders.	having neck problems, 33.33% Suffers from low backrelated problems, and 20% were suffering from shoulder related problems. The study shows the high prevalence of WMSD's in bank employees.
(Dagne et al., 2020)	Work-related musculoskeletal disorders and associated factors among bank workers in Addis Ababa, Ethiopia: a cross-sectional study	Being female, sitting in an awkward posture, lack of work breaks, fixed positions, chair type, and job stress are significantly related to work-related musculoskeletal disorders (WMSD) in bank employees.	Based on the final multivariate logistic regression analysis being female [AOR = 2.98, 95% CI 1.91–4.65], sitting back in a twisted position [AOR = 3.59, 95% CI 2.13–6.08], sitting back bent [AOR = 4.06, 95% CI 2.48–6.66], work on fixed position [AOR = 1.78, 95% CI 1.17–2.71], no work time break [AOR = 3.33, 95% CI 1.44–7.71], type of chairs [AOR = 2.62, 95% CI 1.19–5.75] and job stress [AOR = 2.33, 95% CI 1.19–4.54] were factors significantly associated with WMSDs.
(Dixit et al., 2020)	Obesity and Musculoskeletal Disorders among Public Sector Bank Employees of Mangaluru Region – A Cross-sectional Study	This study found a high prevalence of musculoskeletal disorders among public sector bank employees but did not analyze specific factors related to MSD.	The aggregate prevalence of overweight and obesity was 65.5% (20.9% for overweight and 44.6% for obesity). The prevalence of musculoskeletal discomfort within the past 12 months was 57.3%. Most of the complaints were reported for the lower back (27.1%) and neck (26.9%).
(Umar et al., 2019)	The Prevalence of Musculoskeletal Disorders and Work-Station Evaluation in Bank Employees	This study analyzed the prevalence of musculoskeletal disorders and workstation evaluations among bank employees, finding higher discomfort among women and a need for ergonomic improvements.	About 40% subjects suffered from neck pain while the remaining body parts having discomfort were right shoulder (39%), left shoulder (37%), and low back (36%). Almost 90% of the participants had ROSA score greater than 5 that shows that most individuals were at higher risk of ergonomics hazardous.
(Estember & Aguila, 2020)	The Effects of the Workplace Design, Work Methods Design and Health Problems and Occupational	This paper analyzed factors such as BMI, smoking habits, computer use, and workplace design related to musculoskeletal disorders	The results of the study showed BMI, smoking habits, hours spent in using computer, and final RH score have significant

	Diseases in the Prevalence of Musculoskeletal Disorders among Bank Tellers	in bank tellers.	relationship to the CMDQ scores that would indicate high prevalence of musculoskeletal disorders to bank tellers. In order to minimize musculoskeletal disorders, this paper proposed an ergonomically designed workplace.
(Moom et al., 2015)	Prevalence of Musculoskeletal Disorder among Computer Bank Office Employees in Punjab (India): A Case Study	The study found that factors such as age, smoking/drinking habits, job discomfort, and unhealthy working conditions contribute to an increased risk of MSD among bank employees.	Participants suffering from MSD during the last 12 months reported problem in the low-back pain (40.4%), upper back (39.5), Neck (38.6%), hand/wrist (36.8%) and shoulder (15.2%). In the present study it was found that age, smoking/drinking habits, bad work postures, job insecurity, unhealthy working conditions also contribute to increase MSD in bank employees.
(OZVURMAZ & MANDIRACIOGLU, 2017)	Prevalence of Upper Extremity Musculoskeletal Complaints and Its Relationship with Risk Factors for Bank Employees Working with Computer	The study found that age, gender, working hours, and job control were associated with musculoskeletal complaints in bank employees working with computers.	The rate of existence of a symptom anywhere in upper body area is 61.1%, and the average VAS pain intensity is 1.8±2.8. The most common complaint is reported in the left neck 66.5% and left shoulder 28.5% areas. The least existence of symptoms is found out in left elbow region 13.1% . Average scale points for psycho-social elements of workload, control over the work and social support are determined as 72.3±19.4, 69.1±19.6 and 74.7±19.8 respectively. The average score for work stress is determined to be 1.0±0.26 0.61-2.0 .
(Sharma & Attrey, 2018)	The prevalence of musculoskeletal disorders among bankers	This paper discusses the prevalence of musculoskeletal disorders among bankers and identifies risk factors such as long working hours, static posture, and poor office ergonomics.	Participants suffering from MSD during the last 12 months reported problem in the low-back pain (40.4%), upper back (39.5), Neck (38.6%), hand/wrist (36.8%) and shoulder (15.2%). In the present study it was found that age, smoking/drinking habits,

(Nadri et al., 2014)	Prevalence of musculoskeletal disorders in Aleshtar city bank staff and its associated factors	The study found that factors such as work experience, daily working duration, overtime hours, marital status, and weekly exercise duration were linked to musculoskeletal disorders in bank employees.	bad work postures, job insecurity, unhealthy working conditions also contribute to increase MSD in bank employees. More than 36 percent of employees had musculoskeletal disorder in one of the nine body zones. Statistically significant associations were found between work experience and musculoskeletal disorders in the neck and lower back; between duration of daily work and disorders of the shoulder; between working extra hours during the week with neck disorders; between marital status and lumbar disorders and between duration of exercise per week and knee disorders.
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Table 3. MSD prevalence of the spine segments, upper, and lower extremities in Bank Employee

First author, year	Back of the lower back	Neck	Upper back	Collarbone	Hand or Wrist	Elbow	Overall MSD
Etana, 2021	54%	45,50%	42,70%	37,90%			180%
Kaur, 2021	33,00%			20%			53%
Umar, 2019	36%			39%			75%
Moom, 2015	40%	39%	39,50%	15%	37%		171%
Ozrumaz, 2017		67%		29%		13%	108%
Sharma, 2018	40%	39%	40%	15%	37%		170%
Total	203%	189%	122%	156%	74%	13%	757%

Discussion

An Examination of The Variables Linked to Musculoskeletal Disorders (MSDs) in Bank Workers

Based on an overview of data from multiple studies looking into Musculoskeletal Disorders among bank workers, some findings reflect a high prevalence of musculoskeletal issues in this sector. The neck, lower back, and shoulders are the body parts most frequently affected. Several factors significantly associated with musculoskeletal issues in bank employees include employment history, alcohol use, bad posture, standing for longer than two hours at a time, and workplace stress. The high prevalence of bank employees experiencing issues in the neck, lower back, and shoulders may be attributed to non-ergonomic work postures, especially since many jobs in the banking sector involve prolonged computer work and extended periods of sitting. Inappropriate computer use and non-ergonomic work postures can increase the pressure on these body parts. Additionally, factors such as alcohol consumption, job stress, and smoking habits also play a role in increasing the risk of musculoskeletal issues. These factors can lead to physical and emotional stress, which, in turn, can affect musculoskeletal health.

In conclusion, the banking sector may have a significant prevalence of WMSD among its employees. It is crucial to pay attention to ergonomic aspects, provide training on proper work posture, manage job-related stress, and educate bank employees about potential job-related

hazards. All of these efforts can help enhance the well-being and health of bank employees while reducing the adverse impact of WMSD on their productivity and work quality.

MSD prevalence of the spine segments, upper, and lower extremities

The high prevalence of Musculoskeletal Disorders (MSD) in the neck, shoulders, and wrists/hands among bank employees can be influenced by various factors related to job tasks and working conditions in the banking sector. One of the main reasons is the dominant working posture in this profession. Many bank employees spend most of their workdays in front of computers or desks. Prolonged and monotonous sitting positions, especially with the head leaning forward, can increase pressure on the neck and shoulders. Using computers and other devices can also affect hand and wrist positions, which, if not ergonomic, can lead to MSD problems.

Computer use is another significant factor. Many bank employees spend hours operating computers for their tasks. Non-ergonomic computer use, such as improper keyboard and mouse usage or incorrect screen positions, can result in muscle tension and pressure on the neck, shoulders, and wrists.

Furthermore, job-related stress plays a crucial role in increasing the risk of MSD. Stressful work environments, especially in the banking sector, demanding high productivity and handling crucial financial transactions, can lead to physical and emotional tension. Stress can affect body posture, cause muscle tension, and increase the risk of MSD in the neck, shoulders, and hands.

Lastly, repetitive tasks can also be potential causes. Jobs in the banking sector may involve repetitive tasks such as filling out forms, processing documents, or typing. Continual engagement in these activities can lead to excessive strain on specific body parts, such as the hands and wrists.

It is essential to ensure ergonomic working conditions, provide training on proper work postures, offer sufficient break intervals, and effectively manage job-related stress to reduce the risk of MSD among bank employees. These factors can help lower the risk of musculoskeletal injuries in the neck, shoulders, and wrists/hands among bank employees.

The data in the table depict musculoskeletal disorders' (MSD) prevalence in various body areas among workers, especially those in the banking sector. These results offer insights into the risk levels and prevalence of musculoskeletal injuries that can occur among bank employees. Based on this data, it can be concluded that hairstylist jobs pose a high risk related to MSD, particularly in the shoulders, wrists, hands, neck, and lower back. These findings serve as a basis for understanding that employees in the banking sector face a high risk of MSD, depending on their job activities and working postures.

CONCLUSION

Based on the presented data from various studies regarding the prevalence of Musculoskeletal Disorders (MSD) among bank employees, it is evident that MSD is a significant issue in the banking sector. The neck, lower back, and shoulders are most frequently affected by MSD. Contributing factors to the risk of MSD among bank employees include non-ergonomic work postures, improper computer usage, job-related stress, repetitive tasks, and insufficient breaks. Ergonomic Education and Training: Banking companies should provide training on proper work posture and ergonomics to their employees. It will help them understand how to sit correctly, use appropriate work equipment, and take preventive measures against musculoskeletal injuries. Scheduled Rest Breaks: Bank employees need to have scheduled rest breaks between their tasks. Short breaks can reduce physical and mental strain during work. Work Stress Management: Companies should create a work environment that supports stress management. It may include employee wellness programs, psychological support, and stress management strategies. Monitoring and Evaluation: Banking companies should regularly monitor and evaluate their working conditions to identify ergonomic issues and MSD risks. Corrective actions should be taken promptly. Health and Safety Policies: Banking companies should have robust health and safety

policies that prioritize the prevention of musculoskeletal injuries. These policies should be consistently implemented and updated as needed.

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