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Study Protocol on Musculoskeletal Disorders Situation in a Sample of Iranian Office Workers at Health Centers in Khoi, Iran

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ABSTRACT

Aims: Work-related Musculoskeletal Disorders (WMSDs), particularly Chronic Low Back Pain (CLBP), are a growing public health concern among office workers due to sedentary work styles. This study will aim to investigate the prevalence and risk factors of WMSDs among office workers in Khoi, Iran.

Method and Materials: A descriptive study will be conducted with a convenience sample of 100 office workers at Health Centers in Khoi, Iran. Data will be collected through a self-administered questionnaire on demographic characteristics, work-related factors of musculoskeletal disorders, and musculoskeletal symptoms, and will finally be analyzed through SPSS.

Conclusion: This study will provide a positional approach to be able to determine the situation of WMSDs and related factors among office workers in Khoi, Iran. Additionally, based on these data, the researchers could design proper interventional preventive programs to improve their WMSDs and reduce related among office workers.

Keywords: Work-related Musculoskeletal Disorders, Office Workers, Prevalence, Risk Factors, Iran

Introduction

Work-related Musculoskeletal Disorders (WMSDs), particularly Chronic Low Back Pain (CLBP), have become a growing public health concern globally, affecting millions of office workers who spend long hours performing their tasks in their work office. In Iran, like many other developing countries, the prevalence of WMSDs among office workers is rising due to factors such as prolonged sitting, improper posture, and repetitive keyboard use. These musculoskeletal issues can significantly impact workers' productivity, leading to increased healthcare costs and decreasing their overall Quality of Life (QoL)[1-2].

Musculoskeletal disorders (MSDs) among office workers are often attributed to factors such as improper postures, static positions, repetitive movements, and inadequate equipment placement[2]. Previous studies also identified neck and lower back pain as the most prevalent musculoskeletal disorders in office workers. These findings provide valuable insights into the specific risk factors and affected areas among this population [2-4]. Musculoskeletal disorders are prevalent issues among office workers in Iran. Studies have shown that the neck, shoulders, back, and lower extremities are the most commonly affected areas. Factors such as age, gender, body mass index, and job-related demands have been associated with MSD symptoms in different body regions. Improving workplace conditions, both physically and mentally, is recommended to reduce and eliminate musculoskeletal pain and problems among office workers [5-9].

Work-related musculoskeletal disorders are a common health problem among Iranian office workers. The prevalence of WMSDs in this population ranges from 61 to 70% [9]. The most commonly affected body regions are the lower back and neck

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[5, 10-11]. Risk factors for WMSDs include adverse postures, repetitive movements, prolonged sitting, work stress, and high workloads. Ergonomic assessments using tools such as the Rapid Office Strain Assessment (ROSA) have shown that a significant proportion of office workers are at a medium to high-risk level for MSDs. Improving workplace conditions, both physically and mentally, is recommended to reduce the prevalence of WMSDs among office workers. Corrective measures should be implemented to improve working conditions in both office and operational units [5, 12-13]. Other factors that contribute to musculoskeletal disorders include improper work posture, sustained body position, workplace stress, inadequate rest breaks, and non-ergonomic support facilities [13-14].

It is important to improve workplace conditions, both physically and mentally, to reduce and eliminate musculoskeletal problems among office workers. Additionally, awareness of the dangers of environmental and psychosocial factors in the workplace, as well as the implementation of ergonomic measures, can help prevent and manage these issues. Factors associated with a reduced risk of MSDs among office workers include taking breaks from sitting, engaging in Moderate-to-Vigorous Intensity Physical Activity (MVPA) for at least 150 minutes per week, changing positions from sitting to standing or walking every hour, and getting sufficient sleep of at least 6 hours per day [5, 7, 15]. These factors are effective in reducing the prevalence of MSDs, particularly in the neck, shoulders, and back [16]. Additionally, ergonomic improvements and adjustments of workstations can help identify and eliminate ergonomic risk factors associated with MSDs [17]. Other factors such as age, gender, body mass index, and years of experience may also contribute to the development of MSDs among office workers. Implementing interventions to improve workplace conditions, both physically and mentally, is recommended to reduce and eliminate musculoskeletal problems among office workers.

A previous study determined the prevalence of musculoskeletal symptoms in a sample of Iranian office workers to investigate the association between pain severity, MSDs, and job satisfaction [18]. This study found that musculoskeletal symptoms were common in Iranian office workers, and it was associated with low job satisfaction. Non-ergonomic work sites have emerged as a significant cause of MSDs among employees of healthcare organizations. The postural states of the participants were assessed using the Novel Ergonomic Postural Assessment Method (NERPA) and ROSA [19]. Despite the significant impact of MSDs on office workers' health and well-being, relatively little research has been conducted in this area in Iran. This study aims to address this gap by investigating the prevalence and characteristics of WMSDs among office workers in the Khoi Health Center, Iran.

Method and Materials

The study protocol has been approved by the Medical Ethics Research Center of Urmia University of Medical Sciences (Reference ID: IR.UMSU.REC.1402.298). All participants will be provided with full information on their part in the study and assured that their information will be kept strictly confidential. All participants will be asked to complete a written informed consent form. This will provide a clear understanding that their participation is entirely voluntary, and they have the right to withdraw at any time during the study.

The research population will comprise full-time office workers who are working in health centers in Khoi City, Iran. To meet the inclusion criteria, recruitment will be from office workers who currently attending and working in the health centers and have painful musculoskeletal complaints. Invitations for joining the study will be through a convenient sampling method until the sample size of 100 office Workers. The target population consisted of office workers aged 18 years or older who are currently employed in various governmental and private sectors in Khoi, Iran. The eligible office workers who are willing to participate in the study will be recruited for the study. However, the office workers who will not complete the

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questionnaire completely will be excluded from the study. In this cross-sectional study, the data will be collected through a self-administered questionnaire, which consists of 20 questions. This questionnaire has been developed based on previous research and validated for use in the Iranian context.

This questionnaire includes three sections: 1- Demographic questions, including 13 questions about age, sex, marital status, educational level, job title, and years of working experience. 2- 4 questions regarding musculoskeletal pain including location of pain, duration of pain, severity of pain (rated on Visual Analog Scale (VAS) scale of 1 to 10), and history of treatment, 1-3 questions about stress levels for which participants will rate their stress levels on Perceived Stress Scale (PSS). The 10-item Perceived Stress Scale (PSS-10) is a widely used measure of perceived stress that has been validated in various populations. Each item is scored on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). In the items of the PSS, participants are evaluated on their level of experience of stress symptoms over a specific period (usually the past month). The total score of the PSS ranges from 16 to 80. Higher scores indicate a higher level of stress [25]. Visual Analog Scale is a standard scale by which the pain severity will be rated on a line that is numbered from zero to ten. Zero means no pain, and ten means very severe pain. The Persian version of VAS was validated in a previous study [26].

To analyze data, descriptive statistics will be used. Frequencies and percentages will be applied for categorical variables, while means and standard deviations will be used for continuous variables. To ensure data accuracy and completeness, participants were provided with clear instructions on how to fill out the questionnaire.

Discussion

Work-related musculoskeletal disorders are a significant occupational health problem that results in productivity loss, employee absenteeism, and high healthcare costs [20]. Extrinsic feedback has been suggested as an effective tool for the prevention and rehabilitation of WRMSDs [21]. It has been shown that it is effective in controlling the environment for short-term prevention of functional limitations and sensorimotor alterations, as well as for improving function, symptoms, and sensorimotor control in injured participants [22]. However, more evidence is needed regarding its effectiveness in the workplace [23]. Occupational rehabilitation programs play a crucial role in enhancing the return to work and improving the quality of life for workers with WRMSDs [24]. Factors such as the length of the sessions, the number of therapy sessions, and occupation-based activities have been identified as predictors of success in rehabilitation. Additionally, the use of Artificial Intelligence (AI) shows the potential to reduce the risk of developing WRMSDs through physical ergonomics [24]. Existing literature recommends extrinsic feedback as a promising tool for the prevention and rehabilitation of WRMSD.

The present study can be strengthened in some cases, such as when addressing the need for research on long-term effectiveness and generalizability to the proper workplace intervention [23]. The present study's recognition could predict the importance of probable programs in facilitating return to work and improving quality of life, which is consistent with the existing literature [24]. Another strength of the present study is that it points to important factors that influence success, such as reducing the length of sessions number of sessions, and improving job-specific activities. Therefore, the present study could be in good agreement with existing research on the prevention and rehabilitation of WRMSD.

Conclusions

The findings from this cross-sectional study will provide valuable insights into the burden of WMSDs and help inform policymakers and healthcare professionals in designing targeted interventions to address the causal issues effectively. This study will provide a positional approach to be able to determine the situation of WMSDs and related factors among office workers in Khoi, Iran. Additionally, based on

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these data, the researchers could design proper interventional preventive programs to improve WMSDs, reducing related factors and improving work ability among office workers.

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Authors ' contribution

MHD and RN will perform all study stages and will have complete access to all data for analysis. MHD and BR supervise the whole study and approve the final version of the manuscript. MHD and FP will be involved in drafting the manuscript. All authors will confirm the final manuscript.

Conflict of Interests

There is no conflict of interest.

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References

1. Luan HD, Hai NT, Xanh PT, Giang HT, Van Thuc P, Hong NM, et al. Musculoskeletal disorders: prevalence and associated factors among district hospital nurses in Haiphong, Vietnam. Biomed Res. Int. 2018; doi.org/10.1155/2018/3162564
2. 2. Mianehsaz E, Tabatabaei M, Kashani MM, Badi HZ, Rahimi H. Evaluating musculoskeletal disorders and their ergonomic risk factors among office workers of a large public hospital in Iran. Int. Arch. Health Sci.. 2022;9(1):35-40.
3. Choobineh A, Tabatabaei SH, Mokhtarzadeh A, Salehi M. Musculoskeletal problems among workers of an Iranian rubber factory. J. Occup. Health. 2007;49(5):418-23.
4. Etana G, Ayele M, Abdissa D, Gerbi A. Prevalence of work related musculoskeletal disorders and associated factors among bank staff in Jimma city, Southwest Ethiopia, 2019: an institution-based cross-sectional study. J Pain Res. 2021:2071-82.
5. Besharati A, Daneshmandi H, Zareh K, Fakherpour A, Zoaktafi M. Work-related musculoskeletal problems and associated factors among office workers. International Int. J. Occup. Saf.. 2020;26(3):632-8.
6. Parno A, Sayehmiri K, Amjad RN, Ivanbagha R, Ahagh MH, Foladi SH, et al. Meta-analysis study of work-related musculoskeletal disorders in Iran. Archives of Rehabilitation. 2020;21(2):182-205.
7. Putsa B, Jalayondeja W, Mekhora K, Bhuanantanondh P, Jalayondeja C. Factors associated with reduced risk of musculoskeletal disorders among office workers: a cross-sectional study 2017 to 2020. BMC Public Health. 2022;22(1):1-11.
8. Hosseini E, Daneshmandi H, Bashiri A, Sharifian R. Work-related musculoskeletal symptoms among Iranian nurses and their relationship with fatigue: a cross-sectional study. BMC Musculoskelet Disord. 2021;22(1):1-9.
9. Mohammadipour F, Pourranjbar M, Naderi S, Rafie F. Work-related musculoskeletal disorders in Iranian office workers: prevalence and risk factors. Journal of medicine and life. 2018;11(4):328.
10. Lotfollahzadeh A, Feiz Arefi M, Ebadi Gurjan H, Razagari N, Ebadi B, Babaei-Pouya A. Musculoskeletal Disorders among Healthcare Network Staff using Rapid Office Strain Assessment (2019). International Journal of Musculoskeletal Pain Prevention. 2019;4(4):270-6.
11. Choobineh A, Daneshmandi H, Aghabeigi M, Haghayegh A. Prevalence of musculoskeletal symptoms among employees of Iranian petrochemical industries: October 2009 to December 2012. Int J Occup Environ Med . 2013;4(4):195-204.
12. Chinedu OO, Henry AT, Nene JJ, Okwudili JD. Work-related musculoskeletal disorders among office workers in higher education institutions: A cross-sectional study. Ethiop J Health Sci . 2020;30(5):715-724. doi: 10.4314/ejhs.v30i5.10.
13. Argus M, Paasuke M. Musculoskeletal disorders and associated factors among office workers in an activity-based work environment. Int J Occup Saf Ergon. 2022;28(4):2419-25.
14. Aulianingrum P, Hendra H. Risk Factors of Musculoskeletal Disorders in Office Workers. Indones J Occup Saf Heal. 2022;11:68-77.
15. Azma K. The survey of musculoskeletal disorders risk factors among office workers and the implementation of an ergonomic training program. Journal of Military Medicine · 2015; 16(4):211-216.
16. AlOmar RS, AlShamlan NA, Alawashiz S, Badawood Y, Ghwoidi BA, Abugad H. Musculoskeletal symptoms and their associated risk factors among Saudi office workers: a cross-sectional study. BMC Musculoskelet Disord. 2021;22(1):1-9.
17. Samaei S, Tirgar A, Khanjani N, Mostafaee M, Bagheri Hosseinabadi M, Amrollahi M. Assessment of ergonomics risk factors influencing incidence of musculoskeletal disorders among office workers. Saf Health Work 2015;5(4):1-12.
18. Loghmani A, Golshiri P, Zamani A, Kheirmand M, Jafari N. Musculoskeletal symptoms and job satisfaction among office-workers: a cross-sectional study from Iran. Acta med acad. 2013;42(1):46-54.
19. Khandan M, Arab Z, Koohpaei A. High ergonomic risk of computer work postures among Iranian hospital staff: evidence from a cross-sectional study. Int. J. Hosp. Res. 2016;5(1):29-34.

[DOI: 10.22034/ijmpp.8.4.945]

20. Frasie A, Houry M, Plourde C, Robert MT, Bouyer LJ, Roy J-S. Feedback for the prevention and rehabilitation of work-related musculoskeletal disorders: A systematic review. Work. 2023(Preprint):1-34.
21. Prall J, Ross M. The management of work-related musculoskeletal injuries in an occupational health setting: the role of the physical therapist. J Exerc Rehabil. 2019 Apr 26; 15(2):193-199.
22. Jazzar Y, Beidas T, Shadid AM, Demasi C, Sulaiman MAA. Work related musculoskeletal disorders among dermatologists: A review. Dermatological Reviews.2023.https://doi.org/10.1002/der2.194
23. de Miranda CB, Silva-Junior JS, Garcia KKS, de Sousa FNeF, Fischer FM. Vocational Rehabilitation and Length of Stay at Work after Work-Related Musculoskeletal Disorders: A Longitudinal Study in Brazil. Int. J. Environ. Res. Public Health. 28; 20(3):2334. doi: 10.3390/ijerph20032334.
24. Sekkay F. Prevention of Work-Related Musculoskeletal Disorders supported by Artificial Intelligence. Human Interaction and Emerging Technologies (IHIET-AI 2023): Artificial Intelligence and Future Applications. 2023;70(70).:203-2014
25. Xiao T, Zhu F, Wang D, Liu X, JunXI Sh, Yu Y.Psychometric validation of the Perceived Stress Scale (PSS-10) among family caregivers of people with schizophrenia in China. 2023 BMJ Open 13(11): doi:10.1136/bmjopen-2023-076372
26. Åström, M., Thet Lwin, Z.M., Teni, F.S. et al. Use of the visual analogue scale for health state valuation: a scoping review. Qual Life Res 32, 2719–2729 (2023). https://doi.org/10.1007/s11136-023-03411-3.

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