FREQUENCY OF WORK RELATED MUSCULOSKELETAL DISORDERS AMONG BANKERS IN HAYAT ABAD PESHAWAR THROUGH CROSS SECTIONAL STUDY

Muhammad Idrees Khan[1], Ubaid Ullah Bilal[1], Aamir Shahzad[1], Haider Darain[1]

[1]Institute of Physical Medicine and Rehabilitation, Khyber Medical University Peshawar.

ABSTRACT

Objective: *to determine the frequency of work related musculoskeletal disorders among bankers' community in Hayatabad Peshawar, Pakistan.*

Materials & Methods: *A cross-sectional study was conducted in the banking community of Hayatabad Peshawar, from12 September 2017 to 12 January 2018. Questionnaires were given to different employers of banks. Questionnaire consists of two sections, mainly containing demographic characteristics and modified Nordic method. IBM SPSS version 20 was used for data analysis.*

Results: *The greatest frequency of WRMDs was more common among manager operation n=16, (14.5%), which was followed by Teller n=16, followed by manager n=13, (11.8%), followed by cashier n=9 (8.2%), then followed by officer grade1 n=9, (8.2%) and others n=47(42.7%).*

Conclusion: *MSD's occurs due to repetitive tasks, working in abnormal position, same posture for longer period of time, short rest timing during work and no physical training.*

Keywords: *Musculoskeletal disorders, bankers, executive and operation executive.*

INTRODUCTION

Prevalence of musculoskeletal disorders (MSDs) have been increasingly associated with work conditions in several organizations.[1] Work related musculoskeletal disorders (WRMDS) comprise numerous groups of diagnoses which include different clinical sets of disorders, these include disorders of the tendons, tendon sheaths and muscles, joint disorders, neurovascular disorders and nerve entrapment syndromes.[2] Commonly these symptoms occur in different parts of human body which includes upper limbs (hands, wrists, elbows and shoulder), neck, lower limbs (legs, hips, ankles, and feet) and back. Pain , and fatigue are the most frequently occurring early symptoms of the work-related musculoskeletal symptoms.[3]

The most important Work related musculoskeletal disorders risks are physical characteristics of actions, implied in performing different work tasks.[4] Dangerous physical task characteristics confine movement characteristics such as joint angles and postures i.e. duration; how extreme or awkward, body part compression frequency, magnitude, high frequencies, velocities, accelerations, durations, exertion of force for example high frequencies, magnitudes and exposure to whole body or part of body to vibration. These physical task factors damage body tissue and increase the prevalence of work related musculoskeletal disorders.[4]

Similarly in study related to computer use also shows that the frequency of computer related problems in the study group were visual problems in 76%, musculoskeletal problems in 77.5% and stress in 35%.The common musculoskeletal symptoms were pain (55%) and stiffness (14.8%).[5] Bankers use computer all day long. So the study on the prevalence of Musculoskeletal disorders in bankers was carried out. Further studies on the prevalence of Musculoskeletal disorders among different professionals were carried out with the following results. Musculoskeletal pain was most prevalent among dentists 61% (61/100), followed by surgeons 37%

Correspondence:
Muhammad Idrees Khan
Institute of Physical Medicine and Rehabilitation, Khyber Medical University Peshawar.
Email: idreesymht104@gmail.com
Contact: +923449697104

(37/100) and physicians 20% (20/100).[6] The above mentioned study also tells of certain static and repetitive postures in the professionals, which are the core cause of WRMSD's among them, Additionally the bankers adopt abnormal postures during working hours. which can lead to Musculoskeletal disorders**.** Among bankers, though females were more at risk, not significant. The prevalence of burnout risk among bank workers is high. Female bank workers are more at risk of burnout than male bank workers.[7] WRMSD's are more common in the neck , shoulder and hand region.[8] Among bank staff operators at Yazd the prevalence of back symptoms was 18.6% and of wrist/hand was 0.9%.[9] A study from Kuwait of 750 employees, 80% of the employees had suffered a minimum of 1 episode of MSD during the previous year.[12] No such studies were identified regarding the prevalence of WMSDs in Bankers in Hayatabad Peshawar, KPK. This study is aimed to estimate the prevalence of the WMSDS in the Bankers, in order to identify and categorize the extent and types of WMSDs and compare region wise that which body part is more prone to WRMSDs.

MATERIALS AND METHODS

An information sheet, consent form and Nordic questionnaire was given to 110 bankers, in 24 banks, including both male and female of different age and designation, having minimum of one-year experience, Hayatabad Peshawar, Khyber Pakhtunkhwa, Pakistan, in November to December 2017. The required data was collected from the bankers in Hayatabad banks through questionnaire, who fulfilled the inclusion criteria such as one year of experience at any bank private or public with minimum 5 days of Bank workers apart from office boys, and security guards, who have more than working with at least 8 hours per day, meet the inclusion criteria including both male and female bankers. Apart from that the will of the entire participant was priority during the study.

And exclusion criteria Bankers who have some congenital, hereditary, and systemic disorders, have history of other than occupational injuries and lastly participants who do not fulfill the inclusion criteria were excluded from the study.

Before data collection, permission was taken from the manager of the bank and information sheet was provided to the participants. Consent was taken from the subjects who were willing to participate in the study.

An approved questionnaire was used for the assessment.[14] The reliability of the NMQ found variable answers ranged from zero to twenty three percent.[14] It is used as a simple and expedited inventory for occupational health services in which a more detailed ergonomic analysis is implied.[17]

Because incompletely filled questionnaire 3 of 10 were rejected. From the remaining 7 responses from different bankers were eliminated randomly to compose the final sample of 110 in study. The collected data and result shows real image about the demographic characteristics and the predisposing risk factors about the work related musculoskeletal disorders among bankers working in Hayatabad Peshawar. The obtained results were then calculated in frequencies and percentages while descriptive were shown.

RESULTS

participants for this study….

represent that n=79, (71.8%) participants out of 110 have some form of WRMDs. different job positions showed that; executive operation n=16, (14.5%), Teller n=16, (14.5%), manager n=13, (11.8%), cashier n=9(8.2%), officer grade1 n=9, (8.2%) and others n=47(42.7%) have some form of WRMDs.

Data showed that of all the participants n=93 were male while n=17 were females. WRMDs in female n=10, (58%) subjects out of 17 have some form of WRMDs. Outcomes show that males are more prone to MSD as compared to females. Data analysis regarding mean age of the respondents is 35±8.0 sd.

Data analysis showed that most common musculoskeletal disorder in overall bankers were low back 15(18.5%) problem followed by neck 12(14.8%), shoulders. Whereas Hip, thighs, buttocks, and knees is about 3% and elbow, ankle/feet is 2.5%. Regarding area of pain and symptoms n=53(67%) symptoms in at least one area of body while n=26, (33%) have symptoms in multiple area of the body. Out of n=110 participants n=80participants that experienced WRMD problems in different body region consisting of n=13 manager operation, n=12 manager, n=10 teller, n=6 officer grade 1, cashier n=3 Fugure1:

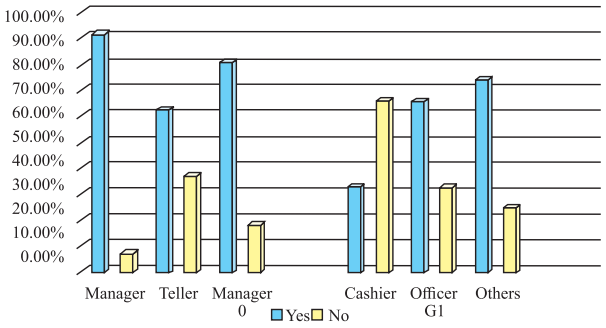

Figure 1: Percentage of Effected and Non Effected Bankers

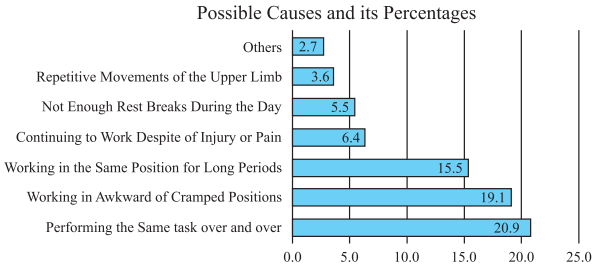

Figure: III; shows percentage of different possible causes of work related musculoskeletal disorders among bankers at Hayatabad, Peshawar.

Percentage of Effected and Non Effected Bankers

Outcome showed that of all n=110 participants the most common risk factor stated for WRMDs was performing the same task over and over (21%), awkward or cramped positions (19.1%%) followed by working in the same position for long periods (15.5%), continuing to work despite of injury or pain (6.4%), not enough rest breaks during the day (5.5%), and repetitive movements of upper limb (5%). So stressful positions in all bankers leading to injuries are performing the same task over and over, working in awkward or cramped positions, working in the same position for long periods.

Comparing different types of treatment data shows that out of n=38 participants using medications n=13, (34.2%) participants were improved while n=25, (65.8%) participants remain unchanged. Of all the n=16 participants using physiotherapy n=11, (68.8%) participants were improved, n=5, (31.2%) participants were unchanged. While surgery and others taken as a treatment option has no effect.

DISCUSSION

Work related musculoskeletal disorders (WRMSDs) is one of the major health issues among banker's community.[4] There is limited literature present about the prevalence of MSDs in bankers Hayatabad Peshawar KP. The result of our study shows that n=80 (72%) bankers have experienced some form of musculoskeletal disorders which is comparable to a study conducted in Kuwait where the prevalence was 80%. The frequency of low back pain in our study is 18.5% his finding to the results of a cross sectional study conducted among bank staff operators at Yazd.[9] where the prevalence of back symptoms was 18.6%. and of wrist/hand was 0.9% which is very similar to the outcome for wrist and hand in our study. The prevalence of shoulder pain among bankers in our study is 12.13% and a similar study conducted in Hong Kong[11] shows the prevalence of problems in different body parts shows: neck—31.4%, back 30.6%, shoulder—16.5%.

Similarly, another study conducted at Brazil[12] shows prevalence rates of 56% for upper limbs symptoms and 30% for 'repetitive strain injury-like condition. Where as in our study separate conditioned are discussed as for hand, wrist, elbow and shoulder joint, but not as whole upper limb and combining all the values of the above areas we have 19.53% prevalence is measured. Also in Korea[1] the roughly calculated prevalence of clinically confirmed cases of Repetitive strain injury was 22%.and found prevalence rates of 56% for upper limb symptoms and 30% for 'RSI-like condition, the study reveal the above percentage of another study in brazil.[12] but in our case the frequency is less than both of them.

In above articles some of the areas have higher prevalence results where as some are closed or less than the values measured in our study, the main reason is that, in some of the above studies the population, gender, working hours and days are different from our study, that's why the resultant prevalence did not exactly match their percentages in certain areas.

The paper reviews workstation, chair, and keyboard design, and makes recommendations to improve user comfort. Also discussed is worker selection, training, posture, conditioning, and rest breaks.[18] On the basis of this article we can say that improper biomechanics, and any prolonged posture will lead to static loading of the soft tissues and cause discomfort.[19] This study is also in support of prolong, static, and awkward posture, which can cause in

back, neck and other areas of the body.

A study conducted in Pakistan, where pain in the neck during working hours was experienced by 71.67% of the participants and 48.33% experienced shoulder pain during working hours.[20] Study conducted at Nairobi, Kenya, where findings of the study showed that most of the bank employees (63.86%) suffered from various musculoskeletal injuries and also having no significant gender difference.[21] This study is quite similar to ours study, although the frequency rate is less than the study conducted by over here (71.8%). This may be due to their working hours, posture, and also practice level of the participants. Also in the study we have seen that the male is more prone to WRMSD's as compared to female.

CONCLUSION

WRMDs shows significant burden for health professionals therefore proper attention and preventive measures should be taken to minimize this burden. This burden is reduced through proper rest, adopting comfortable position or posture, and guidance.

REFERENCES

1. Yun MH, Lee YG, Eoh HJ, Lim SH. Results of a survey on the awareness and severity assessment of upper-limb work-related musculoskeletal disorders among female bank tellers in Korea. International Journal of Industrial Ergonomics. 2001; 27:347-57.
2. Deros BM, Daruis DD, Khamis NK, Mohamad D, Daud SFM, Amdan SM, et al. Prevalence of work related musculoskeleta l disorders symptoms among construction workers: A case study in Malaysia. Iranian Journal of Public Health. 2014; 43:53.
3. Piligian G, Herbert R, Hearns M, Dropkin J, Landsbergis P, Cherniack M. Evaluation and management of chronic work-related musculoskeletal disorders of the distal upper extremity. American journal of industrial medicine. 2000; 37:75-93.
4. Australia S. Work-related musculoskeletal disease in Australia. Canberra, Australia: Australian Safety and Compensation Council. 2006.
5. Sharma A, Khera S, Khandekar J. Computer related health problems among information technology professionals in Delhi. Indian journal of community medicine. 2006; 31:36.
6. Rambabu T, Suneetha K. Prevalence of work related musculoskeletal disorders among physicians, surgeons and dentists: a comparative study. Annals of medical and health sciences research. 2014; 4:578-82.
7. Aguwa E, Nduka I, Arinze-Onyia S. Assessment of burnout among health workers and bankers in Aba south local government area, Abia state, South East Nigeria. Nigerian journal of clinical practice. 2014; 17:296-302.
8. Kim E-A, Nakata M. Work-related musculoskeletal disorders in Korea and Japan: a comparative description. Annals of occupational and environmental medicine. 2014; 26:17.
9. Halvani G, Salmani Nodousgan Z. Survey of Musculoskeletal disorders among bank staff in Yazd. Occupational Medicine Quarterly Journal. 2011; 3:1-7.
10. Akrouf Q, Crawford J, Al Shatti A, Kamel M. Musculoskeletal disorders among bank office workers in Kuwait. 2010. Eastern Mediterranean Health Journal 16 (1), 94-100, 2010
11. Yu I, Wong T. Musculoskeletal problems among VDU workers in a Hong Kong bank. Occupational medicine. 1996; 46:275-80.
12. Lacerda EM, Nácul LC, da S Augusto LG, Olinto MTA, Rocha DC, Wanderley DC. Prevalence and associations of symptoms of upper extremities, repetitive strain injuries (RSI) and'RSI-like condition'. A cross sectional study of bank workers in Northeast Brazil. BMC Public Health. 2005; 5:107.
13. Yim SH, Lee YG, Cho JJ, Son JI, Song JC. Symptom prevalence of work-related musculoskeletal disorders and related factors among bank workers by visual dispaly terminal use. Korean Journal of Occupational and Environmental Medicine. 1997; 9:85-98.
14. Kuorinka I, Jonsson B, Kilbom A, Vinterberg H, Biering-Sørensen F, Andersson G, et al. Standardised Nordic questionnaires for the analysis of musculoskeletal symptoms. Applied ergonomics. 1987; 18:233-7.
15. Andersson K, Karlehagen S, Jonsson B. The importance of variations in questionnaire administration. Applied ergonomics. 1987; 18:229-32.
16. Crawford JO. The Nordic musculoskeletal questionnaire. Occupational medicine. 2007; 57:300.
17. Hildebrandt V, Bongers P, Van Dijk F, Kemper H, Dul J. Dutch Musculoskeletal Questionnaire: description and basic qualities. Ergonomics. 2001; 44:1038-55.
18. Mirmohammadi S, Mehrparvar A, Soleimani H, Lotfi MH, Akbari H, Heidari N. Musculoskeletal disorders among video display terminal (VDT) workers comparing with other office workers. Iran Occupational Health. 2010; 7:11-4.
19. Pope MH, Goh KL, Magnusson ML. Spine ergonomics. Annual review of biomedical engineering. 2002; 4:49-68.
20. Shabbir M, Rashid S, Umar B, Ahmad A, Ehsan S. Frequency of neck and shoulder pain and use of adjustable computer workstation among bankers. Pakistan journal

of medical sciences. 2016; 32:423.

21. Boro WL, Andanje M, Onywera V. Work-related musculoskeletal injuries and conditions suffered by computer-user employees in the banking institutions in Nairobi, Kenya: biokinetics practice and sport injuries. African Journal for Physical Health Education, Recreation and Dance. 2012; 18:344-52.
22. Adegoke BO, Akodu AK, Oyeyemi AL. Work-related musculoskeletal disorders among Nigerian physiotherapists. BMC musculoskeletal disorders. 2008; 9:112.