Original Article

Association among shoulder pain, working hours and device usage in male bankers, Lahore, Pakistan

Mehreen Aslam Gill, Fahad Tanveer, Ashfaq Ahmad, Syed Amir Gillani

Department of Physiotherapy,University of Lahore, Pakistan

Objective: To determine the association among shoulder pain, working hours and device usage in male bankers of Lahore, Pakistan.

Methodology: In this cross sectional survey was done and data on 514 subjects was collected through a convenient sampling technique via self-reported questionnaire. Study participants were had work related aches and working duration more than 3 hours. Data were analyzed by SPSS version 21.

Results: Out of 514 subjects, 106(20.62%) used computer, 36(7.00%) telephone/mobile phones, 19(3.70%) paper work and 3(0.58%) type writer for 8-10 hours. There were 80(15.56%) subjects who suffered mild pain and worked for 7-8 hours, 74(14.40%) 6-8 hours, 69(13.42%) 8-10 hours and 13(2.53%) 2-4 hours, respectively. 65(12.65%) subjects who suffered from moderate pain worked for 8-10 hours, 59(11.48%) 7-8 hour, 50(9.73%) 6-8 hours and 4(0.78%) 2-4 hours, respectively. 136(26.46%) suffered from mild pain used computer, 64(12.45%) telephone/mobile phone, 29(5.64%) paper work and 7(1.36%) type writer.

Conclusion: There was significant association between shoulder pain and working hours and between working hours and device usage but no association between shoulder pain and device usage. (Rawal Med J 201;43:239-241).

Key Words: Shoulder pain, working hours, device usage, bankers.

INTRODUCTION

Shoulder joint is formed by humeral head and the glenoid surface of the scapula.[1] Mechanical workload such as work in uneasy positions, work with hands held above shoulder level and heavy lifting have been recognized as risk factors in working populations.[2] It is not clear yet that how elevated the arms should be and for how long before the destructive impact occur.[3] Musculoskeletal problems include many risk factors like gender, age and other personal features as height, smoking, and also psychosocial, organizational and physical aspects of work like working hours, computing skills, bad postures, insistent movements, rest intervals and carrying exercise.[4] Bankers experience neck/shoulder pain on a weekly basis.[5] In a study, 254 subjects responded the questionnaire, 203 of them were in the inclusion criteria.

The three prominent regions where musculoskeletal symptoms were aroused among the computer users were the shoulder (73%), neck (71%), and upper back (60%) areas.[6] The fundament of well-being is physical exercise.[7] Several studies suggest the effectiveness of physical exercise at the workplace in dealing musculoskeletal pain.[8,9] Treatment regimens has modulated from complete rest to high-intensity strength training.

The etiological factors of shoulder pain in bankers are studied but limited literature is available on association of shoulder pain with working hours and device usage in bankers. This is the first study from Pakistan to determine the association of shoulder pain with working hours and device usage in bankers.

METHODOLOGY

This cross sectional study was conducted in bankers of Allied Bank Limited and Bank Al Habib, Lahore, Pakistan. Data concerning shoulder pain was collected in 6 months from February 2017 to August 2017 through a questionnaire which included demographic traits, total working hours, biomechanical information while sitting, standing or walking, pain intensity using VAS (Visual Analogue Scale) with the score between 0-10, present workability, level of pain during physical activity, sleep patterns due to pain and overall health rate.

Work related questions included parameters i.e. working/office time, which included their time of

working shifts, collecting data on their level of how physically demanding their present work is, their present workability, due to symptoms muscles or joints limited in doing daily activities. The data were analyzed using SPSS version 21. To find out any association between variables, Chi-square test was applied. A $p<0.05$ were considered significant.

RESULTS

There were 514 subjects with mean age of 32.77±9.278 years (range 17-65). Majority, 429(83.5%) were non-smoker (Table 1). There was significant association between working hours and device usage (p=0.000). Computer was being used more than other devices. There was significant association between pain intensity and working hours (p=0.000). 80(15.56%) subjects worked for 7-8 hours, who suffered from mild pain, moderate pain, no pain and severe pain respectively (Table 2).

Table 1. Descriptive statistics of age and smoking (n=514).

	Mean	SD	Range
Age	32.77 Years	9.278	17-65 Years
Smoking	Construct	Frequency	Percentage
	Smoker	85	16.5%
	Non-Smoker	429	83.5%

Table 2. Association between working hours and device usage, working hours and pain intensity (n=514).

Association		Working Hours				P-value
		2-4	6-8	7-8	8-10	
Device	Computer	15	79	83	106	0.000
	Paper work	0	21	41	19	
	Telephone/ Mobile phone	13	55	32	36	
	Type writer	1	9	1	3	
Pain intensity	Mild	13	74	80	69	0.000
	Moderate	4	50	59	65	
	No pain	11	34	10	17	
	Severe	1	6	8	13	

Table 3. Association between pain intensity and device usage (n=514).

Association		Pain Intensity				P-value
		Mild	Moderate	No pain	Severe	
Device	Computer	136	88	42	17	0.169
	Paper work	29	40	8	4	
	Telephone/ Mobile phone	64	44	22	6	
	Type writer	7	6	0	1	

There was no significant association between pain intensity and device usage (p=0.169). 136(26.46%) subjects used computer who had suffered from mild, 88(17.12%) moderate pain, 42(8.17%) no pain and 17(3.31%) severe pain respectively (Table 3).

DISCUSSION

The study showed that shoulder integrity is affected by different work related variables to the bankers and they are prone to develop shoulder symptoms in their daily office work. This is similar to a previous study.[5] Particularly, shoulder pain is being the usual reason of inability to do works with high physical demand. According to our study, there was significant association of shoulder pain with working hours. In an old study, it was reported that prolonged static and insistent work can cause musculoskeletal disorders in bankers.

A study based on one-year prevalence rate of neck/shoulder complaints reported that 54% of the subjects claimed one complaint in arm, neck and shoulder.[10] It was found in a study from hazard models that either the job is done passively or with high strain, was associated with the incidence of shoulder symptoms. Hazard ratios were found to be 2.17, 95% CI 1.024.66 and 2.19, 95% CI 1.084.42, respectively.[11] Another study showed that most commonly affected regions of body in bankers were lower back (59.7%), neck (48.6%), shoulders (38.8%), and wrists (33.5%), more so in females.[12] Like in our study, subjects who used computer for long durations were suffering from shoulder pain more than individuals who were not using computer.

A study confirmed that use of computer has significant association with pain complaints.[13] In our study, majority of the subjects had mild pain. In a similar study on university staff, prevalence of musculoskeletal pain was 69%, most with mild pain.[14]

CONCLUSION

There was significant association between shoulder pain and working hours and between working hours and device usage in bankers. There was no association between shoulder pain and device usage. The finding suggests that the male bankers should take some safeguards like short rest intervals and exercise sessions at work place.

Author contributions:
Conception and design: Mehreen Aslam Gill
Collection and assembly of data: Mehreen Aslam Gill
Analysis and interpretation of the data: Fahad Tanveer
Drafting of the article: Ashfaq Ahmad
Critical revision of the article for important intellectual content: Syed Amir Gillani
Statistical expertise: Fahad Tanveer
Final approval and guarantor of the article: Fahad Tanveer
Corresponding author email: Mehreen Aslam Gill: mehrgill146@gmail.com
Conflict of Interest: None declared
Rec. Date: Aug 21, 2017 Revision Rec. Date: Dec 11, 2017 Accept Date: Jan 9, 2018

REFERENCES

1. Rockwood CA. The shoulder: Elsevier Health Sciences; 2009.
2. Hanvold TN. Mechanical workload and neck and shoulder pain at the start of working life. 2015.
3. Svendsen SW, Bonde JP, Mathiassen SE, Stengaard-Pedersen K, Frich L. Work related shoulder disorders: quantitative exposure-response relations with reference to arm posture. Occupational Environ Med 2004;61:844-53.
4. da Costa BR, Vieira ER. Risk factors for work?related musculoskeletal disorders: a systematic review of recent longitudinal studies. Am J Industrial Med 2010;53:285-323.
5. Janwantanakul P, Pensri P, Jiamjarasrangsri V, Sinsongsook T. Prevalence of self-reported musculoskeletal symptoms among office workers. Occupational Med 2008;58:436-8.
6. Cho C-Y, Hwang Y-S, Cherng R-J. Musculoskeletal symptoms and associated risk factors among office workers with high workload computer use. J Manipulative Physiol Therapeutics 2012;35:534-40.
7. Pedersen BK, Saltin B. Evidence for prescribing exercise as therapy in chronic disease. Scand J Med Sci Sports 2006;16:3-6.
8. Verhagen AP, Karels C, Bierma-Zeinstra SM, Feleus A, Dahaghin S, Burdorf A, et al. Exercise proves effective in a systematic review of work-related complaints of the arm, neck, or shoulder. J Clinical Epidemiol 2007;60:1-14.
9. Proper KI, Koning M, Van der Beek AJ, Hildebrandt VH, Bosscher RJ, van Mechelen W. The effectiveness of worksite physical activity programs on physical activity, physical fitness, and health. Clinical J Sport Med 2003;13:106-17.
10. Eltayeb S, Staal JB, Kennes J, Lamberts PH, de Bie RA. Prevalence of complaints of arm, neck and shoulder among computer office workers and psychometric evaluation of a risk factor questionnaire. BMC Musculoskeletal Disord 2007;8:68.
11. Smith CK, Silverstein BA, Fan ZJ, Bao S, Johnson PW. Psychosocial factors and shoulder symptom development among workers. Am J Industrial Med 2009;52:57-68.
12. Yu S, Lu ML, Gu G, Zhou W, He L, Wang S. Musculoskeletal symptoms and associated risk factors in a large sample of Chinese workers in Henan province of China. Am J Industrial Med 2012;55:281-93.
13. Andersen JH, Fallentin N, Thomsen JF, Mikkelsen S. Risk factors for neck and upper extremity disorders among computers users and the effect of interventions: an overview of systematic reviews. PLoS One 2011;6:19691.
14. Chaiklieng S, Suggaravetsiri P, Boonprakob Y. Work ergonomic hazards for musculoskeletal pain among university office workers. Walailak J Sci Technol 2011;7:169-76.