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Frequency of Musculoskeletal Impairment in Different Professionals Teachers, Bankers and Medical Professional

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A B S T R A C T

Background: Musculoskeletal impairments are leading cause of discomfort and work inefficiency. There is dire need to recommend a postural care program to all those who have at risk for developing such impairments.

Objective: The aim of survey was to identify musculoskeletal impairments in professionals i.e. Doctors, Teachers and Bankers and to determine association between self-reported musculoskeletal symptoms and related factors.

Methodology: This was a cross sectional survey and data was collected from 762 professionals (Bankers, Teachers, Medical professionals) from different hospitals, banks, schools and colleges of Rawalpindi and Islamabad. The inclusion criteria include one year of experience and either gender while professionals having history of musculoskeletal disorder were excluded. Professionals were asked to fill self-structured questionnaire and written informed consent was also taken. Outcome measures were based on the Shoulder and hand (DASH) and Neck Disability Index (NDI) questionnaire. SPSS-21 was used to analyze the data.

Result: 762 professionals (doctors, teachers, bankers) filled the questionnaire and the gender distribution include male 267(35%) and female 494(65%). The professional include Bankers 218(28.6%), Teachers 326(42.8%) and Medical professionals 218(28.6%) participated in sample.

Conclusion: Teaching professionals are at high risk for developing musculoskeletal impairments as compared to bankers and medical professionals.

Introduction

Office Worker have main problems in arms, hands and lower back every year that lead their time away from the jobs and effect the reduction of the nation's economic productivity. The main link of these problems due to activities at workplace by carrying the containers to lifting the patients to pounding computer keyboards is the main subjects among workers, employers, advocacy groups and researchers with major disagreements. The scientific basis for the connections of musculoskeletal disorder at workplace considering with the people, job tasks and job environments is due to musculoskeletal disorders and the workplace that was examined.[1] Musculoskeletal system

provided designed movement and posture for human body. Musculoskeletal system composed of bone and muscles which protect the vital internal organ of body. Body contains three types of muscles, skeletal muscles, smooth muscles and cardiac muscles.[2]

The totals expenses of annual musculoskeletal disorders are costly. In the European countries, for example, it was estimated to vary from 4 to 7% of the gross national product. The proportion of musculoskeletal diseases that are attributed to work is thought to be approximately 30%. For many of the musculoskeletal diseases, mechanical load at work and leisure is an important causal factor. Sudden overload or repetitive or sustained loading can be injurious to various tissues of the musculoskeletal system. On the other hand, low level of activity can lead to deterioration of the condition of muscles, tendons, ligaments, cartilage and even bones. Keeping these all tissues in good condition requires appropriate use of the musculoskeletal system.[3]

Musculoskeletal pain in neck, shoulder, and low back are the most commonly seen in teaching professions. Depression is also a major factor and it reduces the quality of life of teachers. Alterations in ergonomics during working hours may reduce and lower the symptoms of these musculoskeletal problems. Teachers also have routine of carrying heavy load like books, copies and papers of students and during sitting in class they don't have a good ergonomics and sit with awkward posture, bad posture and repetitive activities, psychosomatic stressors and standings for long time these stressors must be condensed to reduce the musculoskeletal problems in teachers.[4]

Working on computers for more than 7 hours is an essential part of offices and especially in places like banks. There is increasing occurrence of upper limb signs with computer usage. Most common areas for developing musculoskeletal problems are neck and shoulder with increasing usage of computers. The modifiable risk factors for these works related musculoskeletal disorders include office environment and psychosocial work-related factors. Continuously working on computers can cause stiff neck muscles and shoulders rounded which cause neck and shoulder pain and muscles spasm.[5]

Nursing is considered to someone who provides complete care to persons and community and caring profession. Nursing occupations vary from simple duty to more complex duty like in emergency room nurses work actively and always remain busy constantly and in other side nurses who work in wards have just simple task to do like checking vitals in every 2 hour. Nurses have also high risk of health problems and most frequently is back problem and pain.[6]

Methodology

The study design was cross sectional survey conducted in six month duration. 762 Professionals (Bankers, Teachers, Medical professionals) from different hospitals, banks, schools and colleges of Rawalpindi and Islamabad were included in sample. The convenient non-probability sampling technique was used for collecting the sample. The inclusion criteria include either gender or professional having more than one year relevant experience while professionals having any history of musculoskeletal disorder were excluded from study. The informed written consent was taken before recruitment in study.

A self-structured questionnaire was used to record the demographic data and standardized assessment tool include the Disabilities of Arms, Shoulder and hand (DASH) and Neck Disability Index (NDI) were used to evaluate the condition in detail. Appropriate assessment and detail of all tools were recorded and coded for analysis. The SPSS-21 was used for analysis, mean, standard deviation, frequency and percentage were used to compare and report the final data in the form of tables and graphs.

Results

Data were collected from 762 professionals (Bankers, Teachers, Medical professionals) from different hospitals, banks, schools and colleges of Rawalpindi and Islamabad. Out of 762 professional's population total females were 494 (65%) and males were 268 (35%). (In which 12.1% were diabetic, 15.6% were hypertensive and 37% others. In risk factors the sedentary professionals were 317(58.4%) and physically active professionals were 443(41.6%).

In NDI score the result of teachers 9.40, in bankers 8.47 and 8.21 in medical professionals. In Dash scale teachers score is 1.0, bankers score is 0.79 and 0.74 in medical professionals. The SD +mean value of NDI scale in teachers are 9.40+8.91, bankers are 8.47+8.38 and in medical professional is 8.21+ 7.59. In DASH the SD +mean value of teachers are 1.00+1.35, bankers are .790+.646 and in medical professionals is .74+.690

In table I the SD +mean value of NDI scale in teachers are 9.40+8.91 and in bankers are 8.47+8.38 and there P-value is .41. In DASH the SD +mean value of teachers are 1.00+1.35 and in bankers are .790+.646 and there P-value is .06

Table I: Comparison between Teacher and Bankers among NDI and DASH Scale

Variable	Mean+SD Teachers	Mean+SD bankers	P-value
NDI	9.40+8.19	8.47+8.38	0.41
DASH	1.00+1.35	0.790+.646	0.06

Table II shows that the SD +mean value of NDI scale in teachers are 9.40+8.19 and in medical

Professionals are 8.21+7.59 and the P-value is .24. In DASH the SD +mean value of teachers are 1.00+1.35 and in medical professionals are .74+.690 and there P-value is .01

Table II: Comparison between Teacher and Medical Professionals among NDI and DASH Scale

Variable	Mean+SD Medical Professional	Mean+SD BANKERS	P-value
NDI	8.21+7.59	8.47+8.38	0.94
DASH	0.74+0.690	0.790+0.646	0.88

Table III shows that the SD +mean value of NDI scale in medical professionals are 8.21+7.59 and in bankers are 8.47+8.38 and the P-value is .94. In DASH the SD +mean value of medical professionals are .74+6.90 and in bankers are .790+.646 and there P-value is .88

Table III: Comparison between Bankers and Medical Professionals among NDI and DASH Scale

Variable	Mean+SD Teachers	Mean+SD Medical Professionals	P-value
NDI	9.40+8.19	8.21+7.59	0.24
DASH	1.00+1.35	0.74+0.690	0.01

Discussion

Out of 762 professional's population total females were 494 (65%) and males were 268 (35%). (In which 12.1% were diabetic, 15.6% were hypertensive and 37% others. In risk factors the sedentary professionals were 317(58.4%) and physically active professionals were 443(41.6%)

A research was conducted in May 2005 revealed dominance of women among 95-96% operators and 4% males. 95-96% static sitting posture was observed. In 51% height of chair was good, 62% visibility of video was good. 44% females had neck or shoulder pain with 38% with wrist and hand musculoskeletal problems.9% males had neck or shoulder musculoskeletal symptoms and no complaints of wrist or hands symptoms.[7] In another previous study most participants were males between age (20 -30) years. Musculoskeletal problems show 72% from previous year and (57.52%) suffered from these symptoms from last week. Musculoskeletal problems in male were 76% and 25% were females.[8] And in other most prevalent body sites between 39-95% appear in neck back and upper limbs were reporting of school teachers. Back pain and awkward postures are mainly problem with MSD,s suffered by school teachers.[9]

The frequency of LBP (46%) and NSP (47%) was among 894 teachers. the frequency of female teachers is higher than male teachers. The self-reporting Neck Shoulder Pain associated with prolongs sitting, standing and static posture. LBP was more constantly related with twisting postures.[10] During past year of 2006 there was 1530 days of sick leave because of MSD,s. Each Nurse average leave was 20% had to use physiotherapy service ,30% had to visit physician and 19.1% had to quit from job.[11] A study revealed that only 44% had no musculoskeletal problems and 30% had neck problems mostly in shoulder and 36% were complaining of back pain. Back pain (51%) and knee pain (47%)patients required medical care.[12]

Conclusion

The present study concluded that Teaching professionals were at high risk for developing musculoskeletal impairments as compared to bankers and medical professionals. It is suggested to design a postural care program for professional to avoid such impairments. Further studies with larger sample size are suggested to explore other contributing factors.

References

1. National Research C, Institute of Medicine Panel on Musculoskeletal D, the W. Musculoskeletal Disorders and the

Workplace: Low Back and Upper Extremities. Washington (DC): National Academies Press (US) Copyright 2001 by the National Academy of Sciences. All rights reserved.; 2001.

2. Elling BEaKM. Anatomy & Physiology for the Prehospital Provider, Second Edition. 2015 second edition.
3. Riihimäki H. Musculoskeletal System. encyclopaedia of occupational health and safety.fourth edition:chapter 4.
4. Durmus DI, Ilker. Are there work-related musculoskeletal problems among teachers in Samsun, Turkey. Journal of Back and Musculoskeletal Rehabilitation. 2012;vol. 25: no. 1, pp. 5-12, 2012.
5. 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(2):423-6.
6. Adhikari S, Dhakal G. Prevalent Causes of Low Back Pain and its Impact among Nurses Working in Sahid Gangalal National Heart Centre. Journal of Nepal Health Research Council. 2014;12(28):167-71.
7. Lys Esther ROCHA1* DMRG, Maria de Fátima MARINHO3 and Denyei NAKASATO2. Risk Factors for Musculoskeletal Symptoms among Call Center Operators of a Bank in São Paulo, Brazil. Industrial Health 2005. 2005:637–46.
8. Stanley M Maduagwu RDM, Kunaba I Duniya , Adetoyoje A Oyeyemi,Ismaila A Saidu and Bukola J Aremu. Prevalence and Patterns of Work-related Musculoskeletal Disorders among Bankers in Maiduguri, Northeast Nigeria. Occupational Medicine & Health Affairs 2014.
9. Smith PNEaDR. A systematic review of musculoskeletal disorders among school teachers. BMC Musculoskeletal Disorders. 2011.
10. Yue P, Liu F, Li L. Neck/shoulder pain and low back pain among school teachers in China, prevalence and risk factors. BMC Public Health. 2012;12(1):789.
11. Choobineh A, Rajaeefard A, Neghab M. Association Between Perceived Demands and Musculoskeletal Disorders Among Hospital Nurses of Shiraz University of Medical Sciences: A Questionnaire Survey. International Journal of Occupational Safety and Ergonomics. 2006;12(4):409-16.
12. Josephine A Engels JWJvdG, Theo F Senden, Bep van't Hof. Work related risk factors for musculoskeletal complaints in the nursing profession. Occupational and Environmental Medicine. 1996:636-41.