

Work related musculoskeletal symptoms among White collar workers: Cross sectional Survey

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Abstract : In Developing countries like ours many white collar workers contribute in trade and industry development of the country. White Collar Worker is a term, typically referring to general office workers and management. They usually do clerical work without extensive use of visual display terminal. Development of work related musculoskeletal disorders (WRMSDs) in this population may have substantial impact on organization. Our study is an attempt to obtain a wider spectrum about musculoskeletal pain prevalent in the white collar workers and to provide an insight about how having a sedentary job can have its ill effects on musculoskeletal system. The pre validated Nordic musculoskeletal questionnaire was used to asses self-reported musculoskeletal complaints. White collar workers from multiple centers (n=60) formed the population of study. Descriptive statistic was used for analysis. Study concluded that lower back is most affected area with acute as well as chronic pain. In review of literature, blue collar workers have neck and upper extremity involvement. Whereas distinct professions like Traffic Police lower back found to be involved. Work site Lower back exercises, advice for ergonomically designed chair and regular physical workout recommended for prevention of occupational hazards.

1 Introduction

Work related musculoskeletal disorders (WRMSDs) are a group of disorders that affects the musculoskeletal system including the nerves, tendons, muscles and joints and supporting structures such as intervertebral disc etc. Such disorders are the common cause of Pain and disability and can lead to joint stiffness, muscle tightness, redness and swelling of the affected area. WRMSDs may progress in stages from mild and all the way to severe. WHITE COLLAR WORKERS is descriptive term for office workers, who use minimum physical exertion, as opposed to (blue-collar manual worker). Managerial, clerical, and sales jobs are common white-collar occupations [2] White-collar workers usually perform job duties in an office setting. Our study is an attempt to obtain a wider spectrum about musculoskeletal pain prevalent in the white collar workers and to provide an insight about how having a sedentary job can have its ill effects.

2 Methodology

Cross sectional Survey study done with the help of Nordic Musculoskeletal Questionnaire (NMQ) and Set of demographic questions. The Data was collected from multiple centers by direct interview method. Apparently healthy 60 white collar workers randomly selected between 30 – 50 years of age. Person with Chronic diseases or disability



were excluded.

Ethical clearance obtained from ethics committee of D.Y.Patil University, Navi Mumbai. After explaining purpose of study, consent taken from subject. The questionnaire was made and translated in regional language and again regional language to English by 2 separate translators. Pilot study was done on 10 people and then after correction questionnaire was distributed among 50 persons. In one to one interview demographic details and NMQ were filled. Descriptive statistic percentage form done. Comparison made with other professions like Traffic Police and blue collar workers with help of literature.

3 Results

Table 1 Age Distribution

Age(years) of the subjects	Number of Subjects
30-40	36
41-50	24

Inference – Age related physiological declines were excluded. So pain can be linked with work hazards.

Table 2 Work Experience

Work experience (Years)	Number of Subjects
1 to 5	25
6 to 10	13
11 to 16	3
17 and above	19

Inference: Well experience subjects present in survey associate symptoms with work.

Table 3 Working Days per Week

Working Days per week	Number of Subjects
5	19
6	35
7	6

Inference – Maximum subjects in 6 days per week indicate hectic schedule.

Table 4 Working hours per day

Working hours	Number of Subjects
7 to 8	36
9 to 10	24

Inference – Working hours associated with static posture and its ill effect.

Table 5: Acute Pain

Body region	Percentage
Lower back	18.33
Neck	16.66
Upper back	10

Inference – In total 44.99 % subjects complains of acute pain.

Table 6: Chronic Pain

Body region	Percentage
Lower back	50
Neck	26.66
Upper back	11.66

Inference –In total 88.32 % subjects complains of chronic pain.

Table 7: Activity loss due to pain

Body region	Percentage
Lower back	33.33
Neck	20
Upper back	15

Inference – in total 68.33 % subjects complains of activity loss due to pain.

Table 8: Job Satisfaction

Likart's scale	Percentage
0 to 1	12
2 to 3	18
4 to 5	38
6 to 7	32

Inference – 70 % subjects are satisfied with their job.

Table 9: Job stress

Likart's scale	Percentage
0 to 1	12
2 to 3	18
4 to 5	38
6 to 7	32

Inference – Job stress perceived by 70 % subjects.

Table 10: Satisfaction level at work environment

Likart's scale	Percentage
0 to 1	5
2 to 3	7
4 to 5	32
6 to 7	56

Inference – work environment is satisfactory for 88 % of population



4 Discussion

In our study we have chosen white collar workers from different strata of society who are usually doing desk job and minimum use of visual display unit. 60 white collar workers were selected through convenient sampling in which 30 male and 30 females were there. We purposely chose 30 males and 30 female in the age group of 30-50 for equal gender distribution. Overall prevalence of musculoskeletal discomfort is 67.21 percentages. In our study we found out that most of the white collar workers who have to sit for long hours and who have to do desk job have low back pain as the commonest site for acute pain, chronic pain and activity loss due to pain.

This is because lower back supports most of your body's weight in sitting position. Workers who sit for most of their workday are exposed physical risk factors like sustained and awkward posture, static load on musculoskeletal system environmental risk factors like poor content include monotonous work and increasing work-time pressure, individual risk factors like addictions, physical inactivity.

When soft tissues are exposed to sustain loading in a single direction without interruption they show creep phenomenon. it results in rearrangement of collagen fibers and water being squeezed from the soft tissues. the soft tissues recover reasonably quickly if excessive load is not imposed. However excessive loading can alter the mechanical properties of the soft tissues. Thus tissues become susceptible to fatigue failure, and the insidious development of musculoskeletal symptoms despite no obvious trauma .Once static postures have induced discomfort the further growth of discomfort increases linearly with time held, and recovery can be slow.

Another area affected is neck. A forward head posture, can be one of the reason. Tightness of the upper trapezium and levator scapula on the dorsal side with tightness of the Pectoralis Major and minor, Weakness of deep cervical flexors ventral and weakness of middle lower Trapezium. creates Imbalance and joints Dysfunction particularly Atlanto – occipital joint C4-C5 segment glenohumeral Joint.

This is known as upper cross syndrome. Psychosocial factors assessed with questions like job satisfaction, job stress and work environment satisfaction. Most of the subjects are satisfied with job and work environment but at same time they perceive stress. In literature Shweta et al.(2015) found that other professionals like Traffic Police also have lower back as most affected body region. According to Nurhayatiet al. (2014), Automobile Industrial worker have high rate (76.97%) of musculoskeletal disorder prevalence and there upper limb region involved more compared to White color workers.

5 Conclusion

The commonest site for acute pain in last 7 days, for chronic pain in last twelve months and commonest area for activity loss due to pain is low back. This may be because of long time spend in sitting by this community and lower back supports maximal body's weight in sitting position. To prevent WRMSDs worksite low back exercises, ergonomically designed chair and regular physical workout recommended.

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