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Research Article

Prevalence and Associated Factors of Neck and Back Pain among Kuwaiti Office Workers

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Abstract

Background: Musculoskeletal disorders are common among office workers. The multidimensional nature of these complaints impacts individuals' physical and psychosocial aspects of life. The aim of the current study was to investigate the prevalence and risk factors of neck and back pain among office workers in the state of Kuwait.

Methodology: A cross sectional survey was conducted, which included 614 office workers (428 female) in Kuwait. Data were collected through a self-administered questionnaire. The questionnaire was divided into the following categories: physical risk factors (posture, exercise habits and frequency), demographics (age, sex), work environment (sitting duration, length of time in front of the computer, frequency of breaks), and psychosocial factors related to psychological distress from job, co-workers, or superiors. Subjects were randomly selected from ministries and governmental institutions according to inclusion and exclusion criteria.

Results: The respondents' ages ranged from 23 to 52 years; 20% of respondents were smokers, and 61% live sedentary life with no exercise. A total of 75% of workers were used to taking rest periods during working hours, lasting 1.68 ± 2.23 hours. Sixty percent of the respondents did not pay attention to their posture; 56% of the respondents are currently suffering from neck pain, and 62%, from back pain. However, these complaints were not associated with job satisfaction, marital status, or exercise level.

Conclusion: Findings of the current study highlight the importance of educating the public on how to avoid postural stress and how to modify office furniture to better suit their anthropometric characteristics. It is of paramount importance that policies be directed to target risk factors leading to neck and back pain and to raise awareness to avoid future disabilities.

Keywords: *Musculoskeletal; Pain; Posture; Office Work; Sedentary*

Abbreviation

MSD: Musculoskeletal Disorders

Introduction

Musculoskeletal disorders (MSD) are a common health problem among office workers [1-8]. Neck and back pain ranked the highest among the reported MSD [1,7]. The incidence of back pain ranged between 63%, as reported among Swedish office workers [9], and 37%, as reported by Nigerian workers [4]. The literature has shown increased MSD among computer users and those sitting at a desk for prolonged periods of time [5]. Ergonomics of the working place and the office arrangement were found to play an integral part in both increasing and decreasing the reported complaints [8,10]. MSD have been associated with socioeconomic consequences such as decreased productivity, increases in the cost of both training and hiring new employees as a result of escalating numbers of medical retirements, and increases in the financial compensation for work-related injuries [2]. Therefore, identifying the incidence of pain occurrence and recommending solutions is paramount to save resources and increase productivity and employee satisfaction.

There is a lack of evidence on the incidence of MSD among office workers in the state of Kuwait. The aim of the current study was to investigate the prevalence of neck and back pain among office workers in Kuwait and to explore the associated predisposing factors. We hypothesized that office workers complain of neck and back pain equally and that their prevalence will be associated with age.

Materials and Methods

In this cross-sectional study, a sample of 750 employees was randomly selected. Using a stratified sampling technique and on the basis of the inclusion and exclusion criteria, both male and female employees were included in the data collection process.

Subjects were enrolled into the study if they were between 23 and 60 years old, had held their current job for at least 1 year, spent at least 5 hours daily in desk work dealing with paper work with or without computer use, and performed a job that does not require manual labor.

Subjects were excluded if they had any congenital or acquired spine deformities, previous spine injury or fracture, or any joint- and bone-related medical condition such as rheumatoid arthritis or osteoarthritis.

Subjects received a self-administered questionnaire, developed from the Nordic Musculoskeletal Questionnaire. The questions cover areas concerning respondents' demographics, workplace conditions and psychosocial information. A supplemental section was added to the questionnaire for the purpose of cultural adaptation. The questionnaire was piloted on a group of office workers (n = 9). Comments were used to modify questions and correct wording.

Respondents were requested to report their complaints of MSD in the neck and/or the back during the previous 6 months. The study was approved by Ethical Committee of Health Sciences Centre of Kuwait University, and all participants read and signed the informed consent form approved by the Ethical Committee before participation.

Data were collected by the research team. The questionnaires were distributed and collected thirty minutes later by the same team.

Data Analysis

Data were analyzed using SPSS software (version 20.0). Descriptive statistics were used to assess the prevalence and frequencies of back and neck pain and demographic characteristics. Cross-tabulations were used to compare MSD on the basis of demographic data and other work-related factors. The Chi-square test was used to examine the relationships between variables. The statistical significance level was set at 0.05.

Results and Discussion

A total of 750 questionnaires were distributed and 645 were received, resulting in a response rate of 86%. Thirty-one questionnaires were excluded because of incomplete answers, and a total of 614 were used for analysis (Figure 1). The demographic information of the participants is summarized in Table 1.

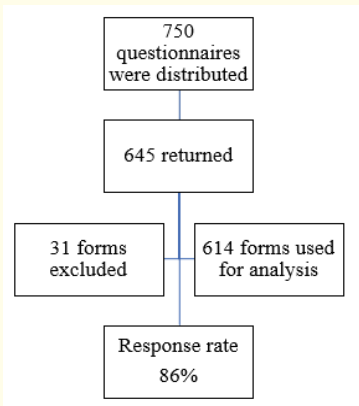

Figure 1: *Questionnaire response diagram.*

	No	%	Minimum	Maximum	Mean ± SD
Sex					
Female (pregnant)	428 (30)	69.6 (4.9)			
Male	186	30.3			
Marital status					
Widow	13	2.1			
Divorced	25	4.1			
Married	401	65.3			
Single	175	28.5			
Education					
Intermediate	20	3.3			
High school	75	12.2			
Diploma	232	37.8			
Bachelor	259	42.1			
Higher studies (PhD - MSc)	28	4.6			
Age					
23-30 years	278	45.3			
31-40 years	214	34.8			
41-50 years	96	15.6			
51- 60 years	25	4.1			
Above 60 years	1	0.2			
Height			100.00	197.00	164.49 ± 10.17
Weight			2.00	270.00	74.90 ± 19.23
BMI			.75	99.17	27.59 ± 6.51

Table 1: *Demographic information of the respondents.*

Respondents' personal habits

Around 20% of the sample were smokers; 61% of the surveyed sample does not exercise, whereas 34.6% exercise regularly, with a mean time of 2 ± 0.83 hours spent on exercise weekly.

The daily average working hours for the respondents is 6.7 ± 2.1 hours. Seventy percent of the sample use computers on daily basis, and around 1.68 ± 2.23 hours is the time spent away from the computer (Figure 2).

Nature of the work

The years spent in work varied between 1 year to 37 years with a mean of 10 ± 7.19 years. Fifty-seven percent of the respondents were satisfied with their jobs. Eighty-six percent were content with team spirit and the team approach used at work. Of the respondents, 84.5% have good relations with their colleagues and around 78.6% have good relations with their superiors. On the other hand, 32.4% think that their work is a source of stress, and 43% relate their bad temper and nervousness to their job.

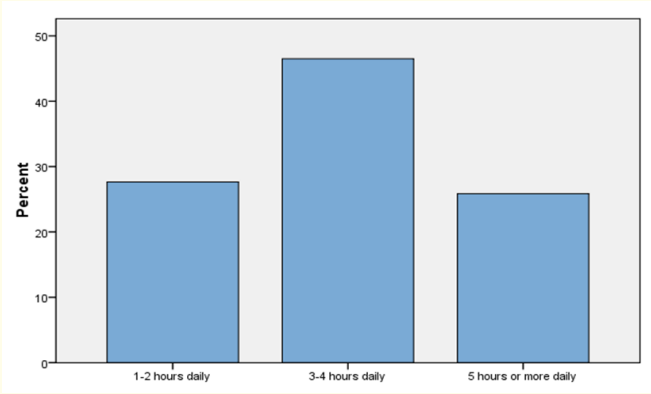

Figure 2: *Percentage of computer daily use among respondents.*

Prevalence of neck and back pain

Only 7% of the sample complained of previous problems, and their complaints were in the wrist (3%) and the foot (4%). During the time of employment, 56% (n = 344) of the sample developed neck pain and 62% (n = 381) developed back pain (the reporting of pain is not exclusive, which means the subject may have both neck and back pain - Figure 3). Although both male and female workers reported taking sick leave for neck and back pain (Figure 4), they failed to visit a physician to obtain proper medical intervention for their complaints. Female employees take more sick leave than men for back pain, whereas the main cause of sick leave among men is neck pain. Pregnant respondents complain of back and neck pain equally. However, their sick leaves are more related to back pain.

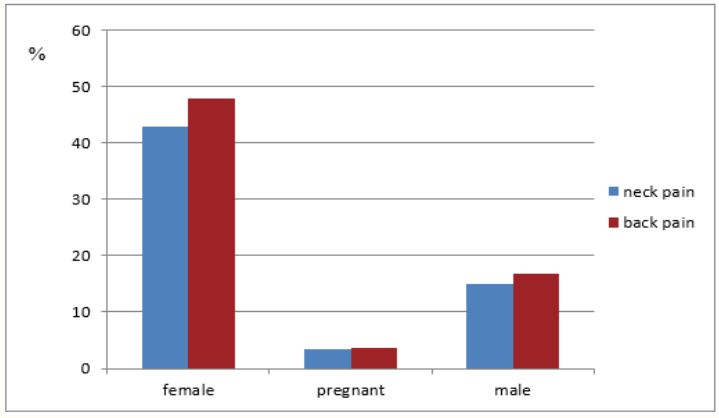

Figure 3: *Percentage of back and neck pain among respondents.*

Thirty percent of the sample thinks that the office furniture is not comfortable; however, nothing is being done to modify the situation, no attention has been paid to the posture during sitting, nor is the posture adjusted for additional comfort, such as using a small pillow behind the back or using a foot rest. Twenty-nine percent of the sample reported a decrease of their performance quality as a result of their musculoskeletal complaint.

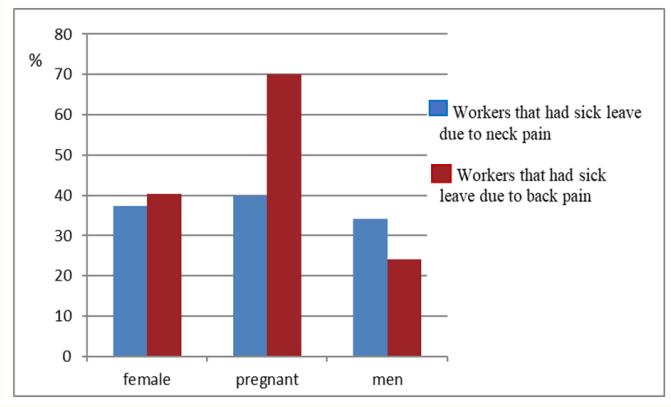

Figure 4: *Percentage of sick leave days among respondents*

MSD complaints were found to be associated with gender (p=0.00), years spent at work (p=0.04), and pad temper (p=0.01). Other correlations can be seen in Table 2.

Variables	p value
BMI and complaints of pain	0.53
Gender and complaints of pain	0.00*
Marital status and complaints of pain	0.17
Smoking and complaints of pain	0.00*
Exercise and complaints of pain	0.52
Working hours and complaints of pain	0.16
Years of experience and back pain	0.04*
Satisfaction and back pain	0.36
Bad temper and back pain	0.01*
Years of experience and neck pain	0.02*
Satisfaction and neck pain	0.52
Bad temper and neck pain	0.00*

Table 3: *Associations between the tested variables.*

**: Significant Association.*

The current cross-sectional study is the first to examine the prevalence of neck and back pain complaints among office workers in Kuwait and to look at the reasons underpinning the complaints.

Our findings show that both neck and back pain are common among the general population of office workers, though some studies have reported high prevalence of neck pain [7,11] and others have reported high occurrence of back pain [1]. Contrary to our hypothesis that respondents will have equal complaints of neck and back pain, respondents in this study have shown back pain to be more prevalent (62%), while the prevalence of neck pain was 56%.

Findings also demonstrate that neck and back pain were more prevalent in female than in male workers (p = .00) and, although the reasons are not explored in the current study, it could be speculated that it is related to other female responsibilities, such as household work.

The majority of respondents spend long hours sitting in front of the computer without taking rest. Sitting for long periods of time could increase intradiscal pressure and overload the back musculature [12]. The nature of office work demands prolonged low-level muscle contraction of specific muscles in the arms, wrists, and hands throughout the day, which forces the employee to adopt a poor body posture [13]. Such postures predispose workers to develop MSD, which are worsened by the lack of exercise, as reported by our sample.

One of the undesirable effects on the individuals' quality of life can be seen in the large number of sick leaves and days off work. Although not very high in the current study, it is an issue that requires attention.

Because of the multifactorial etiology of MSD [8], there was a need to include questions regarding job satisfaction, temper, and psychosocial problems in the survey. The presence of such complaints is expected to have an adverse effect on the workers' general and private lives. Interestingly, 43% of the respondents in the current study have related their complaints to their poor temper at work. Psychosocial factors such as job satisfaction, anger, and work stress were found to increase the odds of complaints among workers [2]. According to Alavi., *et al.* employees with upper limb MSD were more likely to develop psychiatric disorders such as anxiety, depression, social dysfunction, and insomnia than their colleagues with other complaints [14].

The findings of the current study suggest the introduction of measures to prevent MSD among employees to decrease their occurrence. Attempts have been made and have been shown to be successful. Education regarding proper workstation arrangement could have an impact on injury rates [15,16]. Simple measures such as adjusting the back support was associated with decreased pain [2]. Changes made to the arrangement of the desk, computer monitor, and keyboard could lessen the incidence of MSD [17].

Performing simple movements such as transition from the seated to standing posture every 30 minutes could have an impact on the fatigue and exhaustion felt [18]. Regular exercises can play a role in preventing the development of future pain episodes and changes in pain perception due to sensitization [8,12,19]. Nonetheless, some studies have recommended the use of more structured programs [17,20] or core stability exercises rather than general exercises [21], as they are considered to result in better outcomes.

Employee education, however, should be coupled with office furniture modification in order to obtain best outcomes [19]. For the improvement to be maintained over time, long-term commitment by the organization is required [17].

Consequently, it would be worthwhile to invest in programs that educate workers on these risk factors in order to reduce the frequency of complaints in the future. Programs should also discuss psychological wellbeing so that they cover the emotional part of the complaint [14]. It would be useful if these programs were designed and supervised by certified specialist to ensure the quality and suitability of the content.

Future work should be directed towards identifying other methods of injury prevention.

Conclusion

Workplace ergonomics, physical nature of the work, and psychosocial factors are associated with neck and back pain, as identified in the current study.

Addressing these associated factors could be of significance in developing a healthier working environment, preventing future episodes of pain, and enhancing productivity.

Conflict of Interest

The authors declare that they have no conflict of interest.

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