
Proportion of Neck Pain and its Associated Risk Factors among Office Workers in Dhaka City

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Abstract:

Background: Persisting neck pain is a common problem among office workers. With industrialization and growing economy, in developing countries like Bangladesh, lifestyle and work pattern is changing very quickly. With this momentum of our corporate culture we are facing some occupational hazards. Work related neck is a prominent problem and public health concern among these occupational hazards. **Objective:** To assess the proportion of neck pain and its associated risk factors among office workers in Dhaka city was the aim of this study. **Methodology:** A cross sectional analytical study was done in 10 private offices throughout the Dhaka city from July 2013 to December 2013. Non probability purposive sampling was used to collect data. A pretested questionnaire was used to collect the data and it was reviewed and analyzed by using SPSS. **Result:** In this study 18.4% and 48.8% of the respondents had regular and occasional neck pain. Most of the respondent (55.7%) had muscle spasm which was the main cause of neck pain and preventable indeed. Rest of the respondent had abnormal sensation like burning, tingling and numbness. Result revealed that neck pain might be associated with type of job ($P=0.009$), sitting position ($P=0.038$), rest time during work ($P=0.05$), regular physical exercise ($P=0.001$), proper ventilation on the work place ($p=0.035$) and proper sleeping pattern (0.012). **Conclusion:** With growing industrialization occupational hazard like neck pain is putting a remarkable impact on our society. To reduce and prevent this problem proper intervention plan should be implemented immediately.

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Key words: Neck pain, Risk factor, Office worker

Background

Neck pain is a common problem, with two-thirds of the population having neck pain at some point in their lives [1]. Neck pain may arise due to muscular tightness in both the neck and upper back, and pinching of the nerves emanating from the cervical vertebrae. Work related neck disorders are common problems in office workers, especially among those who are intensive computer users [4-11]. The worldwide trend is for people to use computers for longer periods daily, due to increased computer-based tasks at work as well as during leisure activities. Introduction of the computer into the workplace has meant changes in work organization, and a different use of worker physical and mental potential. It is generally agreed that the etiology of work related neck disorders is multi-dimensional which is associated with, and influenced by, a complex array of individual, physical and psychosocial factors. Among these various risk factors, work-related psychosocial factors appear to play a major role. According to Ariëns et al. [2] work-related psychosocial variables may include aspects of the work content, organization, and interpersonal relationships at work, finances and economics. Now a day neck and shoulder pain is a very common phenomenon among office workers in Bangladesh. With the growing field of corporate world in developing country like us, problem like neck pain is a prominent public health issue. There is not available published data in this area in Bangladesh perspective on my research topic. That's why I have selected this topic to find out the present situation in Dhaka city specially to estimate the proportion of neck and shoulder pain among office workers and to determine the relevant factors like posture, time duration of desk work, ergonomics and other physical and psychosocial factors influencing the neck pain. Findings of this study might help to formulate preventive measure in addressing this burning issue.

Methods

Study design: Analytical type of cross sectional study was conducted among office workers in 10 companies consisting of 30-100 employees throughout Dhaka city.

Study area: Companies recruited for the survey was located throughout Dhaka city. This is largest city in Bangladesh with abundant number of national and multinational commercial offices in the country. Ten private offices were selected for data collection throughout Dhaka city.

Study period: It was conducted from July 2013 to December 2013.

Selection of study participant: Office workers working for prolonged sitting position and computer users in ten companies throughout Dhaka city.

- Study unit suppose to be office worker who work in prolong sitting position
- Male and female office workers aged between 18-60 years
- Work for at least 20 hours per week
- Not involved in any other paid work beside the present job
- Working for at least 6 months in their current job
- Willing to participate voluntarily for this study.

Sampling technique: Non probability purposive sampling technique was used for data collection.

Data collection instrument: A pretested questionnaire was developed to collect data from the respondent. Questionnaire included both close and open ended questions and included question related to socio demographic status, lifestyle factors, work related factors and psychological factors.

Data analysis and interpretation: After collection of data, all interviewed questionnaire were checked for its completeness, correctness and internal consistency to exclude missing or inconsistent data. Corrected data were entered into the computer. The data were analyzed by using the statistical software named SPSS (Statistical Package for Social Science).

Ethical Issues: Ethical clearance for this study was obtained from individual institutions. A letter which described survey in details was attached to the questionnaire (Consent form). The aims and objectives of the study were explained to each participant and written informed consent was obtained before beginning each interview. All personal identifiers of the study notes and tapes were kept confidential and destroyed once the study was completed.

Results

Socio demographic distribution of the participants

Age of the respondent was represented by the bar graph in figure 1. More than half of the respondents (53.1%) were from the age group of 20-30 years followed by the age group 30-40 years. In table 1 frequency distribution according to the sex of the participants were shown. Most of the respondents were male and the percentage of male was 73.9% which was near 3 quarter of the total sample. Highest group of people completed their post graduation (48.8%) followed by bachelor 43% and rest of them completed higher secondary or lower.

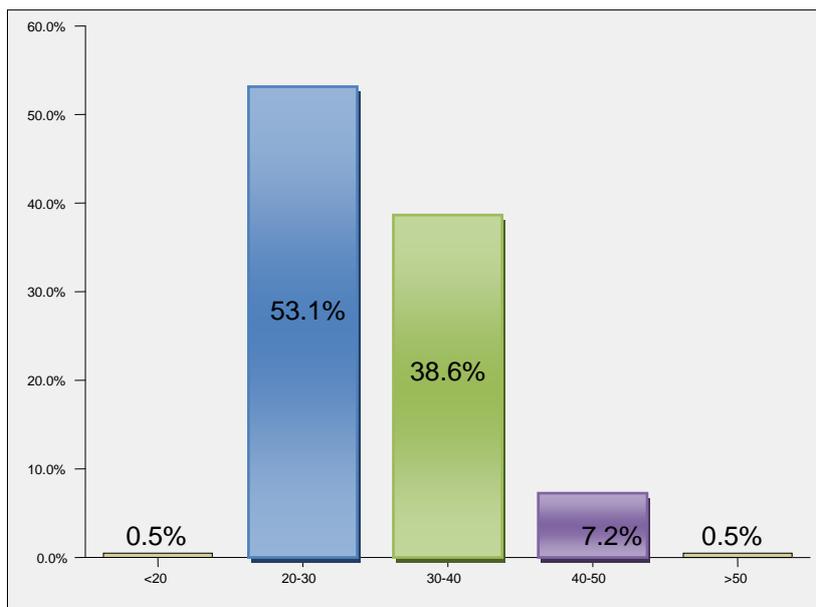


Figure 1: Age distribution of the participants

Table 1: Distribution of the respondents according to sex

Sex	Frequency	Percent
Male	153	73.9
Female	54	26.1
Total	207	100.0

Table 2: Distribution of the respondents according to education level

Education status	Frequency	Percent
Secondary	4	1.9
Higher secondary	13	6.3
Bachelor	89	43.0
Masters or higher	101	48.8
Total	207	100.0

Table 3: Type of job of the participants

Type of job	Frequency	Percent
Clerical	51	24.6
Administrative	95	45.9
Both	61	29.5
Total	207	100.0

From above table 45.9% respondent was from administrative job followed by the percentage of respondent doing both clerical and administrative job 29.5%. About 24.6% respondents do clerical job.

Table 4: Distribution of respondent according to maintain sitting posture during work

Maintain sitting posture	Frequency	Percent
Yes	179	86.5
No	4	1.9
sometimes	24	11.6
Total	207	100.0

From table 86.55% people maintained sitting position constantly during work and 1.9% did not need work in sitting position remaining respondent maintain sitting position only a portion of time during work.

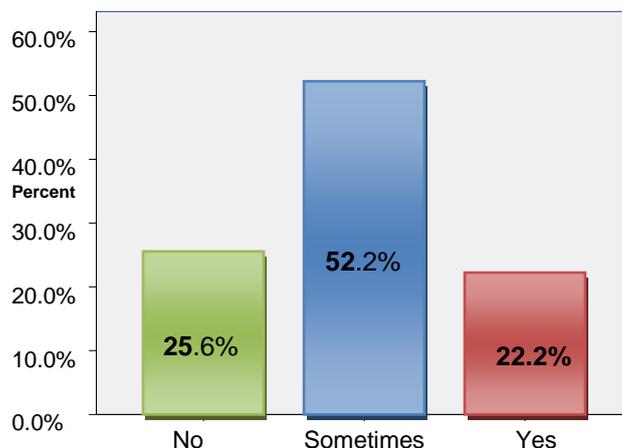


Figure 2: Distribution of neck pain

Among them 22.22% office workers experienced neck pain on regular basis and 52.22% of the respondent sometimes. About 25.6% respondents did not suffer any neck pain.

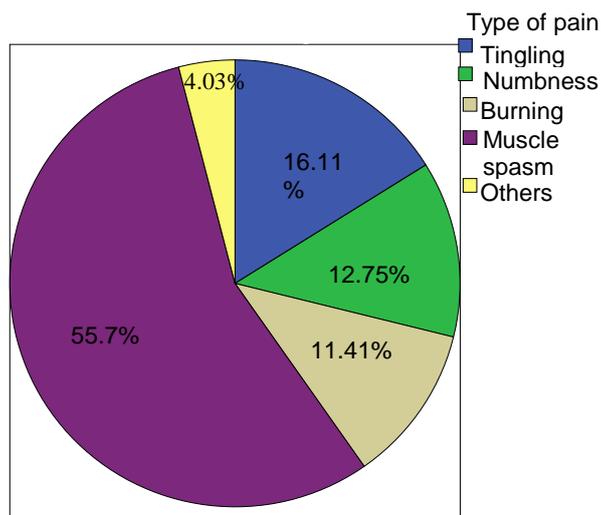


Figure 3: Type of pain

More than half of the respondents (55.7%) suffered from neck pain with muscle spasm which was mainly occurred due to over fatigue of the muscles and can be reduce by taking short break in between the work hour. Another 40% of the respondents reported tingling, numbness and burning sensation as a quality of pain which might be due to the neural problem they had developed.

Table 5: Association between jobs related factor and neck pain

		Neck pain status			Total
		no	sometimes	yes	
Type of job of the participant	Clerical	24	15	12	51
	Administrative	25	50	20	95
	Both	19	36	6	61
Total		68	101	38	207

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.475(a)	4	0.009

Association between type of job and neck pain was calculated from the cross tabulation by Chi square test where Chi square value showed a highly significant relation with a P value of 0.009. Respondent working in administrative area are more prone to having neck pain.

Table 6: Sitting posture during work and neck pain status

		Neck pain status			Total
		No	Sometimes	Yes	
Sitting posture during work	yes	58	86	35	179
	no	4	0	0	4
	sometimes	6	15	3	24
Total		68	101	38	207

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.170(a)	4	0.038

Sitting posture during work showed significant association with neck pain which was calculated by Chi square test and have a P value of 0.038.

Table 7: Regular exercise and neck pain status

		Neck pain status			Total
		No	Sometimes	Yes	
Regular exercise	yes	15	6	13	34
	no	53	95	25	173
Total		68	101	38	207

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.417	2	0.001

Association between exercise and neck pain revealed a highly significant association with a p value of 0.0001. Regular exercise might reduce the risk of having neck pain.

Discussion

Musculoskeletal disorders are the most common type of work-related ill-health problem in Great Britain. Apart from their impact on health, the symptoms of Musculoskeletal Disorders (MSDs) may affect the productivity of those sufferers. This issue has been addressed mostly by

considering the sickness-absence records as outcomes. However, the effects of the symptoms when the workers are present at work have received little attention [12]. Bangladesh is a developing country and the industrialization process is also getting momentum. Now a day's, various types of occupational health problems are increasing due to rapid industrialization and mechanization. Use of computer is tremendously increasing in our country. Government is also encouraging people to increase its use and to develop the qualitative improvement. Foreign organizations including most of the government organization and private organizations are using computer in the country. So, every day more people are coming in contact with the system [3]. In study main objective was to find the burden of neck pain among office workers and to correlate the risk factors so that preventive measure can be taken to reduce the occupational hazards. In a study conducted by Cagnie, B.; Danneels to see the 12 month prevalence of neck pain in office workers revealed 45.5% prevalence of neck pain. Multivariate analysis revealed that women had an almost two-fold risk compared with men (OR = 1.95, 95% CI 1.22–3.13). The odds ratio for age indicates that persons older than 30 years have 2.61 times more chance of having neck pain than younger individuals (OR = 2.61, 95% CI 1.32–3.47). Being physically active decreases the likelihood of having neck pain (OR = 1.85, 95% CI 1.14–2.99). Significant associations were found between neck pain and often holding the neck in a forward bent posture for a prolonged time (OR = 2.01, 95% CI 1.20–3.38), often sitting for a prolonged time (OR = 2.06, 95% CI 1.17–3.62) and often making the same movements per minute (OR = 1.63, 95% CI 1.02–2.60). Mental tiredness at the end of the workday (OR = 2.05, 95% CI 1.29–3.26) and shortage of personnel (OR = 1.71, 95% CI 1.06–2.76) were significantly associated with neck pain. In this study 18.4% of the respondents had regular neck pain and 48.8% had occasional neck pain. In addition 25.6% had regular neck pain and 52.2% had neck pain occasionally. To see the association of neck pain socio demographic factors, lifestyle related factors, psychological factors, and work related factors calculated chi square revealed association between type of job and neck pain (P= 0.009), sitting position and neck pain (P=0.038), exercise and pain (P=0.001).

Conclusion

From the findings of the study we can conclude that with growing industrialization occupational hazard like neck pain is also putting a remarkable impact on the society. To reduce the problem and this public health issue and gain maximum productivity from the employee, company should take some policy and preventive measure should be introduce to reduce the risk factors. Prolonged sitting position might be associated with neck pain which

can be reduce by having short break in between by standing on the side of the desk. Exercise has significant impact on neck pain which can be followed to reduce the possibility of neck pain.

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