

Risk Factors for Cardiovascular Diseases among Young Office Workers

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ABSTRACT

Objective: To determine the frequency of risk factors associated with development of cardiovascular disease amongst young office workers.

Study Design: Descriptive / cross-sectional study.

Place and Duration of Study: This study was conducted at the Medical Outdoor Department of Services Hospital Lahore from 1st January 2017 to 31st July 2017.

Materials and Methods: A total of 150 office workers aged 25-35 years and either gender were included. Those employees that did not complete the proforma were excluded from the final analysis. The demographic details of family history, past history regarding diabetes, hypertension, hypercholesterolemia and MI were recorded. Other risk factors that were investigated included physical inactivity, smoking and occupational stress were also recorded.

Results: There 120 males and 30 females with mean age of the patients was 31.2±3.9 years. Occupational stress was identified as the most important risk factor found in upto 80% of the employees. Other common risk factors included smoking prevalent in 45.8% of workers and lack of physical activity reported by 40% of the employees. Diabetes was prevalent in only 6.7% of the workers.

Conclusion: Occupational stress, physical inactivity and smoking are the common risk factors prevalent among young employees. These potentially modifiable risk factors need to be controlled in order to reduce the incidence of cardiovascular disease.

Key Words: Cardiovascular diseases (CVD), Occupational stress, Hypercholesterolemia

Citation of articles: Tufail S, Imran I, Shafi A. Risk Factors for Cardiovascular Diseases among Young Office Workers. Med Forum 2018;29(4):83-85.

INTRODUCTION

Cardiovascular diseases are a major cause of mortality and morbidity worldwide.¹ It is estimated that nearly seven million people are diagnosed with myocardial infarction (MI) each year.² Numerous risk factors have been identified in the past. These include both modifiable and non modifiable risk factors. Non-modifiable risk factors include advancing age, gender, family history of CVD and ethnicity. These are to be taken for granted and nothing can be done about them. Modifiable risk factors include hypertension, diabetes, physical inactivity, obesity, unhealthy diet, smoking and dyslipidemias.³ These are extremely important to recognise and understand as these can be controlled in order to reduce the risk of developing CVD.

Millions of people go to office daily around the world. Office routine usually involves sitting for long hours in front of a screen. Moreover there are deadlines to meet every other week and this makes office job quite stressful.

This sedentary lifestyle increases the risk of developing CVD in the long run.⁴ In fact a recent review by Kivimaki et al⁵ concluded that work stressors, such as job stress and long working hours, are associated with increased risk of coronary heart disease and stroke. An earlier meta-analysis⁶ found out that lowering office stress can reduce the incidence of coronary heart disease (CHD). The main reason for a increased risk of CVD secondary to office job is the excessive sedentary time spent. In fact a study by Parry et al⁷ showed that sedentary time accounted for 81.8% of work hours which was significantly higher than sedentary time during non-work time (68.9% p < 0.001). In addition to the risk factors identified above, young office workers are under increased stress especially in our setup. Unemployment rate is quite high and even if they find job after months of distress, the jobs are usually low paying and working hours are long. Moreover, additional responsibilities are suddenly put on their shoulders and sooner stressors of married life come into play. All this leads to increased stress on the individual. Only a few local studies are available discussing the risk factors of CVD amongst office workers. Sultana et al⁸ identified smoking, age, family history, high cholesterol levels and occupational stress as the important risk factors amongst office workers. They did not conducted their study solely on young workforce rather only 35% of the patients belong to 25-35 years age bracket. Owing to scarcity of literature regarding the topic, we decided to conduct this study with

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Received: November, 2017; Accepted: February, 2018

objective of determining the frequency of various risk factors associated with CVD amongst young office workers.

MATERIALS AND METHODS

This descriptive cross sectional study was conducted from January 2017 to July 2017 in Medical Outdoor Department of Services Hospital Lahore where all these young office workers visited for these problems. A total of 150 office workers aged 25-35 years and either gender were included. Those employees that did not complete the proforma were excluded from the final analysis. The proforma included demographic details, family history, past history regarding diabetes, hypertension, hypercholesterolemia and MI. Other risk factors that investigated and included physical inactivity, smoking and occupational stress. Smokers were operationally defined as those that even smoke a single cigarette per day. Those who had never smoked or had quit smoking ≥ 5 years ago were classified as non-smokers.

SPSS version 21.0 was used to analyze data. Mean and standard deviation was calculated for all quantitative variables like age etc. Frequency and percentage was calculated for all qualitative variables like gender and the various risk factors etc. Data was represented as bar graphs and pie charts.

RESULTS

There were 120 males (80%) and 30 females (20%). Occupational stress was identified as the most important risk factor found in upto 80% of the employees. Half of the patients reported moderate stress whereas extreme stress was found in approximately 16.7% of the workers (Table 1). Mean age of the patients was 31.2 ± 3.9 years. 12% of the office workers were found to be obese with a BMI of 30 or above while 40% were found to be overweight (BMI = 25-29.9).

Table No.1: Demographic information of the patients

Variable	No.	%
Gender		
Male	30	20.0
Female	120	80.0
Occupational stress		
Extreme stress	25	16.7
Moderate stress	75	50.0
Mild stress	20	13.3
No stress	30	20.0

Other common risk factors included smoking prevalent in 45.4% of workers and lack of physical activity reported by 40% of the employees. Diabetes was prevalent in only 6.7% of the workers (Table 2).

Table No.2: Risk factors for cardiovascular disease

Risk factor	No.	%
Occupational stress	120	80.0
Physical activity	60	40.0
Smoking	68	45.4
Family history of CVD	35	23.3
Diabetes	10	6.7
Hypertension	25	16.7
Hypercholesterolemia	30	20

DISCUSSION

Cardiovascular diseases are responsible for millions of deaths each year around the globe. In 2013 alone, more than 17 million people died as a result of various cardiovascular diseases.⁹ Modern life is becoming increasingly stressful with little room for healthy activities such as exercise. As young people are emotionally vulnerable, they are more prone to develop anxiety and stress.¹⁰ Stress triggers the person to start smoking.¹¹ All this eventually translates into increased risk of developing CVD.

We conducted this study with the aim of elucidating the various risk factors associated with CVD prevalent among young employees. Unlike us, Sultana et al⁷ conducted their survey amongst office workers in general irrespective of a particular age bracket. This could account for the variation in trends observed by us. We identified occupational stress as the commonest risk factor prevalent in upto 80% of the employees. This was consistent with the findings of Sultana et al⁷ who found out that occupational stress was present in 85% of the employees. Upto 50% of employees in our study had moderate degree of stress with only a small minority having mild stress (13.3%). In contrast, majority of employees in Sultana et al's⁷ study had mild stress (37%). This could be due to fact that that young people are much more emotionally vulnerable.^{12,13} Smoking was recognized as a risk factor in 45.8% of the cases in our study whereas only 19% of employees were smokers in Sultana et al's⁸ study. This was also higher compared to a survey amongst healthcare professionals that showed smoking to be prevalent in 29% of the study population.¹⁴ Diabetes, hypertension and hypercholesterolemia was reported in only 6.7%, 16.7% and 20% of the employees respectively. We observed a male to female ratio of 4:1 which was in line with the male predominance observed by Sultana et al. We only included patients aged 25-35 years as other age groups were beyond the scope of our study. There were certain limitations to our study. Effect modifiers and confounders (gender, degree of stress) were not controlled. Ideally they should have been controlled via stratification and post stratification chi square test applied. Secondly, we used a non probability consecutive sampling technique. Lastly but most importantly our study was conducted amongst those office workers who for some reason visited the hospital

OPD. These patients might not be the true representative of a young office workforce as they were visiting hospital for some health related issue. But due to feasibility issues we had to conduct our study on those office workers attending OPD rather than reaching out in various offices for the survey.

Young employees are the backbone of a country's economy. It is important to be able to recognize these risk factors especially the ones that are modifiable. Controlling these modifiable risk factors will help reduce the incidence of CVD in the long run. Moreover, future surveys are warranted determining the knowledge of various risk factors of CVD amongst office workers as the knowledge of CVD risk factors is essential in bringing out the necessary lifestyle changes that will result in reduction in overall cardiovascular risk of an individual.^{15,16}

CONCLUSION

Occupational stress, physical inactivity and smoking are the common risk factors prevalent among young employees. These potentially modifiable risk factors need to be controlled in order to reduce the incidence of CVD.

Author's Contribution:

Concept & Design of Study:	Sidra Tufail
Drafting:	Iram Imran
Data Analysis:	Anam Shafi
Revisiting Critically:	Sidra Tufail, Iram Imran
Final Approval of version:	Sidra Tufail

Conflict of Interest: The study has no conflict of interest to declare by any author.

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