

Original Article

Blue-collar Employees and Cardiovascular Health: A Cross-sectional Study

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Received on: 05-08-2020; Revised and Accepted on: 13-08-2020

ABSTRACT

According to World Health Organization, the cardiovascular disease was the leading cause of NCD (Non-communicable diseases) deaths in 2012 and was responsible for 17.5 million deaths, or 46% of NCD-caused deaths. The purpose of this study is demonstrating a key in the development of an area of research by identifying the importance of cardiovascular disease among blue-collar workers and timely measure for maintaining their better health status. Using a cross-sectional research analysis, we managed to analyse the incidence of cardiovascular disease among blue-collar workers. Prevalence of cardiovascular disease was proven to be relatively high in this group of workers. However, the awareness, treatment and the control of cardiovascular diseases in this group were very low, the prevalence was higher in Indians compared to other nationalities studied. Risks were higher among smokers and also those who consume high cholesterol content food. . The majority of the population were married, overweight or obese. The study aimed at shedding light on the issue to assist policy makers and blue-collar workers (industrial or occupational workers) about management of health as a personal issue and communities of blue-collar workers living in camps erected by companies and provide food. Also the study shows why blue-collar workers proportionately suffer from cardiovascular diseases compared to white-collar workers although more research is required to address the issue in detail.

Keywords: Blue-collar workers, cardiovascular health, Non-Communicable disease, World health organization, Blood pressure, cholesterol, diet, United Arab Emirates

1. INTRODUCTION:

Cardiovascular diseases (CVD) impact many people in different age groups. Very often, they severely limit the income and savings of impacted individuals and their families. According to World Health Organization, the cardiovascular disease was the leading cause of non-communicable diseases (NCD) deaths in 2012 and was responsible for 17.5 million deaths, or 46% of NCD deaths (WHO, 2014). Lost earnings and out of pocket health care payments weaken the socioeconomic development of communities and nations. It was estimated that between 2005 to 2015, China had lost \$558 billion in

foregone national income due to the combination of heart disease, stroke, and diabetes. If current trends are allowed to continue, by 2030 an estimated 23.6 million people would die from cardiovascular disease, mainly from heart attacks and strokes (WHO, 2017). Over the last four decades, the rate of death from CVD has declined in high-income countries, owing to the reduction in cardiovascular diseases (CVD) risk factors and better management. Recent studies indicate that, although the risk-factor burden is lower in low- income countries (WHO, 2014), the rates of major CVD and death are substantially higher than high-income countries. This research had been conducted on south Asian blue-collar workers, so it is important to discuss about CVD in South Asia and same time review impacts of CVD world-wide with an emphasis in Europe and America.

1.1 Background of the Problem

Today's tremendously competitive and globalized business situation demands a planned approach to direct and elevate organizations growth. Human resources development is one of the main fields for development. Blue-collar workers are the

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DOI: doi.org/10.46978/sjc.20.1.2.11

backbone of country's economy; hence is very essential to look for the blue-collar workers' health. According to the World Health Organization (WHO), Non-communicable diseases such as cardiovascular disease, cancer, chronic respiratory disease and diabetes cause 60% of all deaths globally, 80% of which occurs in low and middle income countries (Narayan, K. M. V. & Ali, M. K., et al. 2010). Like many other parts of developing countries, Dubai's labour force depends on these low middle income countries like India, Pakistan, Bangladesh and other South Asian countries. In these populations CVD are very common due to many reasons such as lack of health financial issues and national eating habits. Ignoring proper management of health warning signs, lead to hospital referral and even hospitalization. Blue-collar workers' physically and mental fitness contributes to powerful economy and booming industrial zones.

1.2 Background of the Study

The Blue-Collar Worker: this title is given to those workers who are manual workers in industries. There are many explanations regarding the collar coding. For the type of works the name "blue collar" initially originated from the overalls worn by shop, floor workers in some U.S. factories (Shimwell, J., 2001). First time this term was used in 1924 low state in Hardin county of United States in reference to trade's jobs; blue-collar people occupy mid-level to low positions in the occupational structure (Marandi, E.H. & Moghaddas, M.J., 2013).

Working class occupations are typical of complexity as well as manual instead of non-manual. The choice of blue-collar work is very likely to be endogenous (Kvarnström, S., 1997), occupational choice is likely to be affected by a variety of variables such as individual specific socioeconomic factors, health constraint, risk aversion and labour mobility. Also, it can be partially affected by other factors such as unemployment rate and the labour market characteristics of counties (Kvarnström, S., 1997).

Cardiovascular Diseases Health: CVD or heart and blood vessel diseases are also called heart diseases. It includes numerous problems and many of them are related to a process called atherosclerosis. This is a condition that develops when a substance called plaque builds up in the walls of the arteries. This build-up narrows the arteries, making it harder for blood to flow normally. If blood clot forms, it can stop the blood flow which can cause heart attack or stroke (Work SHIFTS, 2011). There are many conditions which comes under the name of cardiovascular diseases, such as heart attacks, ischemic, haemorrhagic stroke, heart failure, arrhythmia, heart valve problems, blood pressure, arteriosclerosis /atherosclerosis, peripheral vascular disease (PVD), congenital heart diseases/ defects, diseases of the aorta and & its branches.

1.3 Objectives of the Study

This study will uncover the risks or predisposing factors causing cardiovascular disease and de-conditioning, to find out how health education on proper diet/nutrition, weight control, stress management, proper treatment and management of healthy life style can reduce these risks. To determine if person's lifestyle predisposes to cardiovascular disease in blue-collar workers. Also, to assess the impact of prolonged unhealthy diet on cardiovascular health of blue-collar workers. Further, assessing the impact of uncontrolled blood pressure, high blood cholesterol and diabetes on cardiovascular health of blue-collar workers are some objectives of the study. Uncovering, the impact of lack of health education and medicine use orientation for known cases of cardiovascular disease in blue-collar workers; in addition to assessing other risk factors of CVD among Blue-collar workers. Finally, raising awareness of life-threatening conditions of cardiovascular disease and measuring existence of unrecognized risk factors of cardiovascular disease in blue-collar worker were objectives of the study.

2. METHODOLOGY

Sample selection: Two hundred qualified candidates were selected (n = 200; 100% participation rate) for the study. The candidate were male immigrant workers of at least 18 years old. The nationalities of the workers were as including Indian (n = 81), Pakistani (n = 52), Bangladeshi (n =27), Sri Lankan (n =7), Filipino (n =18), Nepalese (n = 4) and other nationalities (n =11) in working in Dubai, UAE (April August 2017). Information obtained related to biodata, general condition, lifestyle, factors, cardiac medical history and current condition was collected through a questionnaire which was designed after consulting cardiologists whom were visited by the candidates in cardiology clinic and compatible with the data collection system of the cardiology clinic concerned. Type of research: This is a Qualitative research study, employed a cross-sectional design; allethical approvals were obtained, informed written consent was taken from participants Individually.

Research Instruments: The study consent and questionnaires were written in English (Qualified translators were provided if needs arose). The questionnaire was then pretested in a pilot study and finalized after necessary amendments. The questionnaire made simple due to the low literacy rates among the South Asian expatriate population in the UAE. General condition of the interviewees, health conditions, lifestyle risk factors including tobacco use, alcohol consumption, physical activity, family and personal disease history all were recorded during the interview. Also, family cardiovascular health history, nature of work, years of experience as blue-collar worker, history of smoking, type of food intake and cardiac health check-ups, body weight and height measurements were performed. All weighting wasperformed carefully (Seca703, Productnumber7031321993 SECA Hamburg, Germany).The

World Health Organization guidelines were used to classify underweight, normal or overweight and obese.

Research Execution: The project was carried out between April and August 2017 while the candidates were interviewed in a cardiology department of a private hospital in Dubai. The sample size of this study was based on the need to explore cardiovascular health among Blue-collar workers. Results have been shown in tables 1 to table 11.

3. BASIC RESULTS

Table 1. Participants Gender details, male were high 95% as compare to female which were 05%.

Gender	Total	%
Male	191	95%
Female	9	5%

Table 2. Participants Age details, age group of 40 and above were high 72%% as compared to other groups.

Age	Total	%
40 +	145	72%
35-40	35	17%
30-35	16	9%
25-30	4	2%

Table 3. Participants Gender details, married were high 94% as compare to single which were 06%.

Status	Total case	%
Married	189	94%
Single	11	6%

Table 4. Participant's Nationality details, Indian were high 40% as compared to other nationalities

Nationality	Total	%
Indian	81	40%
Pakistan	52	26%
Bangladesh	27	13%
Philippine	18	9%
Sri Lankan	7	3%
Nepal	4	2%
Others	11	7%

Table 5. Participant's level of Education, 17% were not educated at all. Only 24% were graduated and 59% were having Matric / secondary level education.

Education	Total case	%
None	35	17%
Matric	116	59%
Graduate	49	24%

Table 6. Participant's type of work, 44% were involve in light labour work. 35% were doing moderate labour work and 21% were having heavy duty labour work.

Work type	Total	100%
Light	89	44%
Moderate	68	35%
Heavy	43	21%

Table 7. Participant's General condition and Lifestyle details.

SNO	General Condition	Result %
1	Overall good health	26%
2	Diabetes	69%
3	High blood pressure	53%
4	High Cholesterol	44%
5	Emotional disorder	3%
6	Asthma / Respiratory disease	3%
7	Weight gain or lost within year	2%
8	Sleeping disturbance	43%
9	Allergy	7%
S.no	Lifestyle	Result %
1	Smoker	66%
2	Vegetarian	2%
3	Vegetarian & Non-vegetarian	10%
4	Non-vegetarian	88%
5	Physical exercise	8%
6	Meal on time	38%
7	Eating at home	38%
8	Eating in restaurant on daily basis	10%
9	Eating in restaurant on weekly basis	10%
10	Eating in restaurant on monthly basis	4%
11	Eating in restaurant occasionally	22%
12	Eating backed products	61%
13	Eating Backed products daily	less than 1%
14	Eating Backed products weekly	8%
15	Eating Backed products monthly	2%
16	Eating Backed products occasionally	35%
17	Alcohol usage	38%
18	Alcohol Consumption daily	less than 1%

19	Alcohol Consumption weekly	6%
20	Alcohol Consumption monthly	1%
21	Alcohol Consumption occasionally	17%
22	Red meat consumption	91%
23	Red meat consumption daily	2%
24	Red meat consumption weekly	25%
25	Red meat consumption monthly	1%
26	Red meat consumption occasionally	5%
27	Fast food consumption	49%
28	Fast Food use daily	1%
29	Fast Food use weekly	10%
30	Fast Food use monthly	3%
31	Fast Food use occasionally	33%

Table 8. Participant's Cardiac Medical History.

S.no	Cardiac medical history	Result %
1	Prolong medicine use	60%
2	Family history of Diabetes or high blood pressure	49%
3	Don't know about family medical history	6%
4	Stroke history	1%
5	History of chest pain or shortness of breath	33%
6	Hospital admission with cardiovascular disease	24%
7	Hospital re-admission with the same disease	21%
8	Family history of heart attack	0%
9	History of cardiovascular surgeries	3%
10	History of sudden unconsciousness or Faint	6%

Table: 09. Participant's weight and level of obesity.

SNO		Result %
1	Underweight / BMI < 18.5	1%
2	Normal weight / BMI 18.5 to 24.9	29%
3	Overweight / BMI 25 to 29.9	60%
4	Class one obesity/ BMI 30 to 34.9	10%
5	Class two obesity/ BMI 35 to 39.9	0%
6	Class three obesity / BMI > 40.0	0%

Table 10. Participant's current condition.

SNO	Current condition	Result %
1	Currently on cardiac medicine	49%
2	Medicine orientation its usage & complications	48%
3	Unwanted condition during work, headache, tiredness or chest pain	88%
4	Mental stress	62%
5	Doctor visit or Medical follow-up	20%

4. DISCUSSIONS

4.1 Statistical Analysis

The stepwise analysis was carried out to examine the association of socio-demographic, lifestyle and other factors with the odds of cardiovascular health awareness among blue collar-workers. The study, included education, work type, general condition, lifestyle, cardiac medical history and current health status as an analysis tool to conclude this research. Statistics clearly shows, blue-collar workers are suffering from cardiac de-conditions at the very high percentage, and they need urgent medical attention. The measured variables clearly show that smoking, obesity, diet, stress and uncontrolled blood pressure are very common among the population studied. The range of age was 40 and above. Among the population studied, smoking was a predominant (66%) which is a well-studied cause of CVD (CDC, 2014) in addition stress was high in the population (62%). The individuals studied in were suffering from mental stress of different kinds, including financial, family crises and job insecurity. These were states as the main cause of sleeplessness among them. Forty three per cent of the population were unable to sleep properly leading towards different de-conditions. Proportion of obesity/ overweight was very high among the population of blue-collar workers, (60%) of them are overweight and 10% of them were I (WHO, 2004) in class 1 obesity according to WHO Classification of obesity index. Only 29% of the studied population had normal weight. A normal blue-collar worker eats 3 to 4 full meals per day. The results show that 62% of them eat junk food, and a large number of them are meat eaters (91%) on daily or weekly basis. These facts lay emphasis on the importance of health education and raising awareness on healthy eating as 4 meals per day provides almost 5000 to 8000 calories per day which is alarmingly. In addition to high calorie contents 38% of these workers taking alcohol of bad quality due to high price. Sixty per cent of the population are on medication for long time but only 52% are oriented about the use and side effects, these all again indicate the importance of health education. Awareness and orientation classes and education can save them from life threatening condition like myocardial infarction or heart attack if they control their chronic conditions through proper

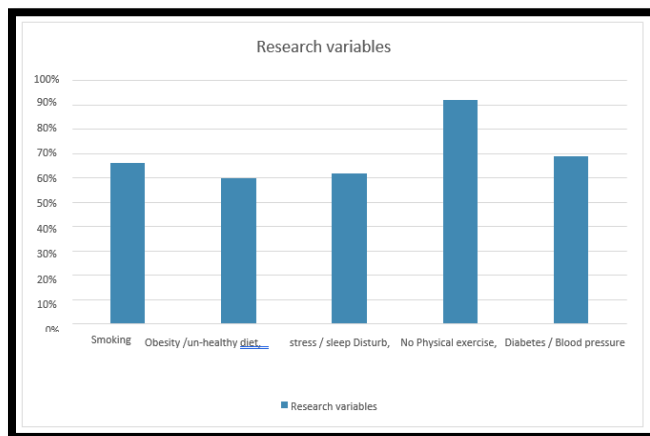
medicine usage. It is very low percentage of them those are checking their cardiovascular health are doing medical follow-up properly only 20%. It is very common for blue-collar workers that they ignore their early signs and symptoms of CVD due to many reasons like attributing the symptoms to kind of food or similar reasons. Also, their unexpressed symptoms to their employers is due to the threat of dismissal from work by their employers. For example 88% of them had chest pain, shortness of breath, headache, or tiredness while working but they ignore.

4.2 Profile of Respondents

All blue-collar workers seeking employment in the Dubai UAE are required by federal law to undergo a communicable disease screening test (i.e. tuberculosis by chest X-ray and human immunodeficiency virus by serology), at a government visa screening centre before receiving residency visa.

4.3 Analysis of Responses

Approximately 26% were in good health and the remaining 74% were cardiovascular patients, insufficient physical exercise (92%), was highest risk factor to get cardiovascular disease among blue-collar workers followed by uncontrolled high blood pressure and diabetes around 68%, smoking was 66%, mental stress / sleep disturbance around 62%, and obesity was 60% which is 5th largest factor behind cardiovascular diseases in blue-collar workers.



4.3 Intermediate Conclusion

The prevalence of cardiovascular disease among study participants aged 40 years and older was particularly high, (72%) compared to another age group according to the study. The study findings fill an important gap in the literature pertaining to blue-collar workers health; namely, prevalence statistics are vital for researchers, practitioners and policymakers that are concerned in observation, screening and developing cost-effective interventions. In the present study, smoking, mental stress, fatty food and lack of knowledge on cardiovascular disease were strongly associated with an

increased prevalence of cardiovascular disease or conditions among blue-collar workers. After adjustment for confounding variables, the study showed a significant relationship between cardiovascular diseases and advancing age, lower levels of physical activity, smoking, obesity, stress, history of hypertension and diabetes. Alarmingly, most of the participants classified as cardiovascular patients were not aware of their condition and 80% of study participants had never had their cardiovascular health examined. This underscores the urgent need for strategies to reduce inadequate control of cardiovascular disease. A high proportion of participants had a rural background and people with rural background and low socioeconomic status have limited access to medical care result in poor control of cardiovascular disease. The findings suggest that the assessment of common risk factors for cardiovascular disease should be considered for inclusion in the list of tests required as part of the medical examination at the time of applying or renewing visas for blue-collar workers in the UAE.

In this study, there was a high prevalence of cardiovascular disease among those who were diabetic who had lived in UAE for five or more. A significant proportion of the study population, particularly those who have been in UAE for less than five years remained unaware of their cardiovascular health status. In this study those were aware of their cardiovascular health, treatment and control of cardiovascular disease that it is crucial for reducing cardiovascular death rates as the study population is already prone to developing coronary heart diseases at the age of 40 and above, who have 3 to 5-fold increase in the risk of myocardial infarction and cardiovascular death compared with other age groups.

Therefore, there should be more emphasis on improving the provision of primary health care services to South Asians living in the UAE coupled with educational campaigns to encourage people to check their cardiovascular health regularly, especially if they have the familial history of hypertension and other chronic conditions like diabetes or cardiovascular conditions.

4.4 Lessons learned / Learning aspects

The study teaches us lessons that cardiovascular health is very important factor in life expectancy particularly when it comes to blue-collar workers, which plays an important role in policy making. Blue-collar workers community is experiencing troubles in their life which makes them susceptible to many life-threatening conditions due to cardiovascular disease. The results show that proper orientation of the healthy diet, weight control, physical exercise and giving up bad habits could save them from developing cardiovascular

diseases. Smoking is very significant factor in increment of cardiovascular diseases among blue-collar worker, according to this research study teaching and awareness to quit smoking would be the great help in reducing the numbers of

cardiovascular diseases. Dedicated health care screenings for blue-collar workers is essential to serve and educate the community. Blue-collar workers aged 40 and above must go under complete cardiovascular check up to find out root cause and stage of the disease. Further management, medicine orientation and aware to chronic disease like high blood pressure, diabetes, and high cholesterol will be very helpful.

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5.1 Ethical Implications

This is an academic qualitative research of cross-sectional design in which interviews are conducted after taking written consent from respondents, the information collected for this research will be kept confidential and outcome of this research will never be used for any kind of business development. The content of this research is according to information provided by the respondents in direct interviews through BCWCH research questionnaire not modified any information received from respondents. The respondents were provided researcher details and contact number in case if they need to make any changes in information which they have provided and in same way all respondents provided their contact details if researcher needs more information regarding their cardiovascular health. The interviews would be conducted individually so that respondents could answer without any hesitation.

5.2 Replication of the Study

Throughout the review I did not find any landmark study replicated to this study.

5.3 Acknowledgement

Special thanks to Professor Farry Bruce Jeffery for his guidance throughout the program. I am thankful to my family specially my mother Mrs. Laila Rabnawaz and Dr. Sadia Ahmed for their lot of prayers and many thanks to King's CPD staff being helpful, I am very thankful to all research Participant's for their time and efforts.

Article Citation:

Authors Name. Naseer Ahmed. **Blue-collar Employees and Cardiovascular Health: A Cross-sectional Study.** SJC 2020;1(2): 66 - 72
DOI: doi.org/10.46978/sjc.20.1.2.11