



ISSN: 0975-833X

RESEARCH ARTICLE

“PREVALANCE OF RISK FACTORS OF CARDIO VASCULAR DISEASE AMONG BANK EMPLOYEES OF BELAGAVI CITY” A CROSS- SECTIONAL STUDY

1,*Santosh Kumar Shah, 2Ashwini B. Narasannavar, 3Mubashir Angolkar and 4Mallpur, M. D.

^{1,2,3} Department of Public Health, J.N. Medical College, KLEU, Belagavi
⁴Department of Community Medicine, J.N. Medical College, KLEU, Belagavi

ARTICLE INFO

Article History:

Received 11th April, 2015
Received in revised form
02nd May, 2015
Accepted 12th June, 2015
Published online 31st July, 2015

Key words:

Cardiovascular disease,
Risk factor,
Bank employees,
Belagavi city.

ABSTRACT

Background: Cardiovascular diseases are a group of disorders of the heart and blood vessels. A Cardio vascular disease is second largest group after mental illnesses. Cardiovascular diseases are leading cause of death in developing countries, having contributed 63% to the global mortality. **Objectives:** To estimate the prevalence of different risk factors of cardio vascular disease among bank workers of Belagavi city.

Materials and Methods: This is a Cross sectional study among the bank employees of selected nationalized banks of Belagavi city. A total of 180 subjects aged 20 years and above were included in the study. A structured W.H.O questionnaire was used to collect data. Body mass index (BMI), Blood pressure (B.P) and Random blood sugar (RBS) was recorded. The data was statistically analyzed using SPSS.

Results: The prevalence of risk factor of cardiovascular disease was as follows smoking 11.7%, alcohol 37.8%, BMI (obese 13.4% and pre-obese 38.3%), Hypertension 20%, Diabetes were 9.4% and pre-diabetes 18.9% . in this study there was statistically significant association between age with BMI, HTN and Diabetes.

Conclusion: This study shows the burden of cardiovascular disease risk factor in the bank employees of Belagavi city. Exercise and education to the masses to bank employees should be an important component of preventive program.

Copyright © 2015 Santosh Kumar Shah et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Santosh Kumar Shah, Ashwini B. Narasannavar, Mubashir Angolkar and Mallpur, M. D., 2015. ““Prevalance of risk factors of cardio vascular disease among bank employees of Belagavi city” a cross- sectional study”, *International Journal of Current Research*, 7, (7), 18558-18561.

INTRODUCTION

Cardiovascular diseases are a group of disorders of the heart and blood vessels (www.euro.who.Int...disease/cardiovascular- disease/cardiovascular-disease). The causes of cardiovascular disease are diverse but atherosclerosis and/or hypertension are the most common. Additionally, with aging a number of physiological and morphological changes occur that alter cardiovascular function and leads to subsequently increased risk of cardiovascular diseases, even in healthy asymptomatic individuals (en.wikipedia.org/wiki/cardiovascular-disease). Projections indicate that 35 million deaths out of the 58 million worldwide expected deaths in 2005 were due to chronic, non communicable diseases (World Health Organization, 2013). According to W.H.O estimates, in 2002, 16.7 million people around the globe died of cardiovascular diseases each year. This represents about 1/3 of all deaths globally. 80 percent of the burden is in low and middle income countries.

***Corresponding author: Santosh Kumar Shah**
Department of Public Health, J.N. Medical College, KLEU, Belagavi

By 2020, cardiovascular diseases and mental illnesses will be responsible for about one half of all deaths and one half of all healthy life years lost worldwide. CVD is the leading cause of death in Europe, accounting for over 4 million deaths each year. 39% of deaths in the UK are from cardiovascular disease (www.americanheart.org). The Indian subcontinent (India, Pakistan, Bangladesh, Sri Lanka, and Nepal) is home to 20 per cent of the world’s population and may be one of the regions with the highest burden of CVD in the world. In 2003 the prevalence of coronary heart disease in India was estimated to be 3-4 % in rural areas and 8-10% in urban areas with a total of 29.8 million affected according to population-based cross-sectional surveys (Goyal and Yusuf, 2006). C.V.D growing at 9.2% per year. The incidences of cardiovascular diseases have gone up (24.8%) significantly for people between the age of 25 and 69 years which means we are losing more people in productive age group mainly due to these chronic diseases (www.deloitte.com/in). Occupation like bank employees who deal with various types of customers, involves economic liabilities, high levels of accountability, greatly reduced physical activity, sedentary mode of functioning which may

predispose for the development of various diseases like hypertension, obesity, diabetes mellitus. There are very few studies on bank employee hence the present study was conducted.

MATERIALS AND METHODS

A cross sectional study was conducted to know the prevalence of risk factors of cardiovascular disease among bank employees of Belagavi city between February 2014 – October 2014. Assuming the prevalence of Risk factor to be 50% among bank employees sample size was calculated using the formula:- $n=4pq/d^2$ and the total sample was 180. Simple random sampling technique was used for the selection of bank and study participants also. Ethical clearance was obtained from JNMC institutional ethics committee. Permission from bank manager was obtained after explaining the objectives as well as the methodology of the study. Bank employees who were available at the time of data collection and willing to participate and gave written informed consent were included in the study. The data was collected by using WHO questionnaire, Height and weight was measured by using tape and weighing machine. Blood pressure and Random blood sugar was recorded using sphygmomanometer was taken and Glucometer respectively.

Data analysis

data was entered in SPSS version 20 and MS excel. The data was summarized with the descriptive statistics like percentage, mean, median, and standard deviation. Inferential statistics like χ^2 and fisher's exact test was used for testing the hypothesis.

RESULTS

A total of 180 bank employees were recruited in the study. Among these participants 142 (78.9%) were males and 38 (21.1%) were females.

Recruited participants were of age above 20 years. In which majority of participants 41.1% were of age group above 50 years (Table 1). Majority of participants were Hindus 169 (93.9%), followed by Muslims (4.4%) and Christians (1.1%). Among these participants 79.4% were married.

Table 1. Distribution of participants according to age and sex

Sex	Age in years				Total
	20-30	30-40	40-50	Above 50	
Male	27 (19%)	24 (16.9%)	24 (16.9%)	67 (47.2%)	142
Female	15 (39.5%)	7 (16.9%)	9 (23.7%)	7 (18.4%)	38
Total	42 (23.3%)	31 (17.2%)	33 (18.3%)	74 (41.1%)	180

Among these participants 79.4% were married. Among 180 participants 5(2.8%) of them had their education above the post graduation like PhD, double graduate, 71(39.4%) were post graduates, 70(38.9%) did their graduation, 32 (17.8%) had completed their Pre university college level education and 2(1.1%) participant refused to give information about their education. 21 (11.3%) were smokers and all were males. 37.8% study participants consumed alcohol (Table 2). There was statistically significant difference found between BMI and age. The obesity is more in age group of above 50 years than in those ages less than 50 years that is 18.9%. While under weight is more in age group 20-30 years (11.9%) (Table 3). Hypertension was more (28.4%) in age group above 50 years and (27.3%) in age group of 40-50 years.

Table 2. Distribution of participant according to smoking habit and alcohol intake

	SMOKE		ALCOHOL	
	Frequency	%	Frequency	%
Yes	21	11.7	68	37.8
No	159	88.3	112	62.2
Total	180	100	180	100

Table 3. Association of age of participants with B.M.I

Age in years	Body mass index				Total
	under weight	normal range	pre- obese	obese class 1,2,3	
20-30	5(11.9%)	24 (57.1%)	9(21.4%)	4(9.6%)	42
30-40	2(6.5%)	9 (29%)	16(51.6%)	4(12.9%)	31
40-50	1 (3%)	11 (33.3%)	19(57.6%)	2(6.1%)	33
above 50	6(8.1%)	29 (39.2%)	25(33.8%)	14(18.9%)	74
Total	14	73	69	19	180

P = 0.036

Table 4. Association of age of participants with Blood pressure

Age in years	Blood pressure			Total
	Normal	high normal	hypertension stage 1,2,3	
20-30	33 (78.6%)	7 (16.7%)	2 (4.8%)	42
30-40	23 (74.2%)	4 (12.9%)	4 (12.9%)	31
40-50	21 (63.6%)	3 (9.1%)	9 (27.3%)	33
Above 50	31 (41.9%)	22 (29.7%)	21 (28.4%)	74
Total	108	36	36	180

P<0.001)

Table 5. Association between age and R.B.S of participants

Age in years	Random blood sugar				Total
	not interest to test	Normal	pre diabetic	Diabetic	
20-30	6 (14.3%)	32 (76.2%)	3 (7.1%)	1 (2.4%)	42
30-40	3 (9.7%)	22 (71%)	6 (19.4%)	0	31
40-50	5 (15.2%)	15 (45.5%)	10 (30.3%)	3 (9.1%)	33
above 50	6 (8.1%)	40 (54.1%)	15 (20.3%)	13 (17.6%)	74
Total	20	109	34	17	180

P= 0.011)

Hypertension is more in older age group. It was statistically significant (Table 4). Among 180 participants, 20 study participants refused to check their blood sugar. In age group above 50 years 13 (17.6%) were diabetic, 15 (20.3%) were pre-diabetic and in age group of 40-50 years 9.1% were diabetic. Diabetics is more in older age group. Statistically significant association was found between age and R.B.S. (Table 5).

DISCUSSION

In the present study males were more compared to females. The prevalence of smoking was 11.7% and all were male participants. The percentage of smokers was more in age group of 20-40 years and in unmarried participants. The analysis showed association between smoking and age and even with marital status. A study conducted in Sullia Taluka, Karnataka the prevalence of smoking was 10.3% in study population (Ismail *et al.*, 2013). Study among Bank Employees in Hubli showed that the prevalence of smoking was 10% (Lokare *et al.*, 2012). In this study it was found that 37.8% of the study participants consumed alcohol. Similar studies conducted among bank employees the prevalence of alcohol intake in was found to be 41.7 % (Salaudeen *et al.*, 2014 and Ismail *et al.*, 2013). Alcohol consumption is less in our study this is because some participants did not give proper information about alcohol consumption. In present study only 29.4 % study participants had a brisk walk in their work and 48.33% of bank participants used bicycle or walk at least for 10 minutes which created a brisk walk. Only 30% of participants were involved in moderate intensity sports, fitness or recreation. Another study in Belagavi on bank employees found 56% were physically active. Among these physically active study participants 29.2% were involved in mild activity, 34.5% were involved in moderate activity and 36.3% were involved in vigorous activity (Shivaramakrishna *et al.*, 2010).

Obesity was more in the age group of above 50 years and found to be 18.9%. Obesity increases with the increase in age. It was found statically significant. Similar study conducted in Karnataka showed the prevalence of overweight and obesity to be between 30-36% (Ismail *et al.*, 2013 and Shivaramakrishna *et al.*, 2010). In our present study prevalence of hypertension was found to be 24.6 % in males and 2.6 % in females. HTN increases with increasing in age. The difference was found statistically significant between age and HTN. The prevalence of HTN was 23.8% in married study participants. It was also significant. It may be due to with increase age the physical activities of employees decreases and their way of living was more sedentary. A study on bank employees in Surat city found that the overall prevalence of hypertension was 30.4%. Significant positive association was found between age and prevalence of hypertension (Momin *et al.*, 2012). Another study in Pondicherry in bank employees the prevalence of HTN was 44.3% and pre-hypertension was 41.1%. which was statistically associated with HTN (Kumar and Sundaram, 2014). In this study prevalence of diabetes was 9.4% and pre diabetics was 18.9%. Statically significant association was observed with gender age and diabetes. Diabetes is more in age group of above 40 than below 40 years. The prevalence of diabetes was found to be 20% among bank employees of

Meerut district (Parashar *et al.*, 2009). Another study in Belagavi, the prevalence of diabetes was found to be 21.1%. Increase in the prevalence of diabetes with age which was statistically significant shown in this study (Shivaramakrishna *et al.*, 2010).

Conclusion

Modifiable cardiovascular risk factors are widely prevalent among bank employees of Belagavi city and increases with number of years spent in bank along with their sedentary life style practices. There is need for country like India to frame and implement preventive strategies based on risk factors because they belong to productive age group. Since majority risk factors, are related to lifestyle. Exercise and education to the masses to bank employees should be an important component of preventive program.

Limitations

The study being a cross-sectional study has several inherent limitations. Bank employees may have not provided the actual details about their habits which may have resulted in deviation from actual interpretation of the risk factors especially about alcohol consumption. The measure of physical activity, smoking alcohol intake and diet intake were based on the self reporting of bank employees. i.e subjective.

Recommendation

Health education related to risk factors of cardiovascular disease should been given to the bank employees. Periodic screening for the risk factors of cardiovascular disease among bank employees should be done. Stress relieving activities and also other recreational activities should be conducted for bank employees as they deal with money matters.

Acknowledgement

We extend our sincere thanks to all the bank employees who have participated in this study and all our friends who helped us directly or indirectly in our study

Conflict of Interest: None declared

Source of support: Nil

REFERENCES

- Assudani, A., Sheth, M., Jain, N., Parnami, S. 2014. Indirect Determinant's of Obesity in bank employees of urban Vs dsdsrs. A Cross- sectional study. *International Journal of Applied and Pharmaceutical Technology*. 5;5-12.
- Awosan, K.J., Ibrahim, M.T.O., Sabir, A.A., Ejimodu, P. 2013. Awareness and prevalence of risk factors of coronary heart disease among teachers and bankers in Sokoto, Nigeria. *Journal of Medicine and Medical Sciences*; 4(9) .335-342.
- Bozo, D., Pano, G., Citozi, R. 2013. Assessment of physical activity level in office employees groups in Albania. *Journal of Human sport and Exercise*; 8; 152-164.

- Cardio vascular disease in India. Challenges and way ahead. (ASSOLHAM INSIA) Deloitte. International Heart protection summit, September 2011. Available from www.deloitte.com/in. Accessed on 28th October, 2013.
- Definition of cardiovascular disease. Available from [www.who.Int...disease/cardiovascular-disease/](http://www.who.int...disease/cardiovascular-disease/) cardiovascular-disease. Accessed on 26th October, 2013.
- Definition of cardiovascular disease. Available from [en.wikipedia.org/wiki/](http://en.wikipedia.org/wiki/cardiovascular-disease) cardiovascular-disease. Accessed on 26th October, 2013.
- Gasperin, F.O.d.L., Neuberger, M., Tichy, A., Moshammer, H. 2014. Cross sectional association between cigarette smoking and abdominal obesity among Austrian bank employees. *British Med J*; 1-8
- Goyal, A, & Yusuf, S. 2006. The burden of cardiovascular disease in the Indian subcontinent. *Indian J Med Res* 124, September, 235-244.
- International cardio vascular disease statistic. American Health Association, www.americanheart.org. Accessed on 25th November, 2013
- Ismail, IM., Kulkarni, AG., Kamble, SV., Borker, SA., Rekha, R., Amruth, M. 2013. Prevalence of hypertension and its risk factors among bank employees of Sullia Taluk, Karnataka. *Sahel Med J*; 16;139-143.
- Kaur, P., Rao, VT., Sankarasabbaiyam, S., Narayan, MA., Ezhil, R., Rao, RS., Gupte, DM. 2007. Prevalence and distribution of cardio vascular disease risk factor in urban industrial population in south India – A cross sectional study. *J Assoc Physicians India*; 55:771-6 <http://www.ncbi.nlm.nih.gov/pubmed/18290552>. Accessed on 13th March 2014.
- Kumar, G. S., Unnikrishnan, B., Nagaraj, K. 2013. Chronic diseases and occupational health risks among bank employees of southern Karnataka city, India. *Indian Journal of Community Medicine*; 38;61-62
- Kumar, G.S., Sundaram, D.N. 2014. Prevalence and Risk Factors of Hypertension among Bank Employees in Urban Puducherry, India. *Int J Occup Environment Med*; 5:94-100.
- Leong, L., Chia, E.S. 2012. Prevalence of cardiovascular risk factors among healthcare staff in a large healthcare institution in Singapore. *Singapore Med J*; 53(8): 517–521
- Lokare, L., Nekar, M. S., Mulkipatil, S. Y., Venkatesh, M. 2012. Metabolic Equivalent Task Score and Risk Factors of Coronary Heart Disease in Bank Employees. *Int J Biol Med Res.*; 3(2): 1627-1630
- Maroof, A. K., Parashar, P., Bansal, R., Ahmad, S. 2007. A Study on Hypertension among the Bank Employees of Meerut District of Uttar Pradesh. *Indian Journal of Public Health*; 51;225-227
- Momin, MH., Desai, VK., Kavishwar, AB. 2012. Study of socio demographic factors affecting prevalence of hypertension among bank employees of Surat City. *Indian J Public Health*; 56:44-48
- Nagpal, S., Gupta, N., 2014. Incidence of Hypertension and Risk Factor Assessment among Sedentary and Labour Population of Punjab. *Sch. J. App. Med. Sci.*; 2(4C):1330-1333
- Parashar, P., Maroof, KA., Bansal, R., Ahmad, Pant, B. 2009. Prevalence and risk factor of diabetes among bank employees of Meerut district, *Indian J. Prev. Soc. Med*; 40;157-161.
- Salaudeen, A.G., Musa, O.I., Babatunde, O.A., Atoyebi, O.A., Durowade, K.A., Omokanye, L.O. 2014. Knowledge and prevalence of risk factors for arterial hypertension and blood pressure pattern among bankers and traffic wardens in Ilorin, Nigeria. *African Health Sciences*; 14;593-599
- Shah, B. and Mathur, P. 2010. Surveillance of cardio vascular disease risk factor in India- The need and scope. *Indian Journal of Medical Research*; 132(5):634-642.
- Shivaramakrishna, HR., Wantamutte, SA., Sangolli, NH. and Mallapur, DM. 2010. Risk Factors of Coronary Heart Disease among Bank Employees of Belagavi City - Cross sectional Study. *Al Ameen Journal Medical Science*, 3(2):152-159
- Shreshta, K.U., Bhattarai, N.T., Upadhyaya, B.A., Rajopadhyaya, A., Rajopadhyaya, S., Pandey, R.M., 2014. Preliminary Study of Prevalence of Coronary Heart Disease amongst the Civil Servants, Employees of Corporation and Academic Institutions in Nepal. Available from [www.msmt.org.np/ Publication/ Download/Civil%20 Servants.pdf](http://www.msmt.org.np/Publication/Download/Civil%20Servants.pdf).
- Thierry, G., Benjamin, M.L., Bertrand, M.E., Stephan, M.I., Gisèle, K.K., Louis, J.N., et.al. 2014. Prevalence rates and cardio metabolic determinants of diabetes mellitus and pre-diabetes with projected coronary heart disease at bank site of Brazzaville. *World Journal of Cardiovascular Diseases*, 4, 77-86. (<http://www.scirp.org/journal/wjcd/>) Assessed on 11th June
- Undhad, M.A., Bharodiya, J.P., Sonani, P.R. 2011. Correlates of hypertension among the bank employees of Surat city of Gujarat. *National J.Com.Med.*; 2;123-125.
- Undhad, M.A., Bharodiya, J.P., Sonani, P.R. 2011. Correlates of hypertension among the bank employees of Surat city of Gujarat. *National J.Com.Med.*; 2;123-125.
- Vinod, KR., Pastapur, M. and Suresh, PK. 2012. Screening for risk of cardiovascular disease among officer grade bank employees of Gulbarga city. *Journal of Cardiovascular Disease Research*; 3(3):218-224.
- World Health Organization. An estimation of the economic impact of chronic non communicable diseases in selected countries. Department of Chronic Diseases and Health Promotion (CHP) <http://www.who.int/chp> Accessed on 28th October, 2013.
