

## SCREENING FOR RISK OF HYPERTENSION AMONG THE BANK EMPLOYEES OF KALABURAGI CITY

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### ABSTRACT

**Background:** Hypertension (HTN) is a modifiable and major risk factor for coronary artery disease, heart failure, cerebrovascular disease and chronic renal failure. With sedentary lifestyles, commendable work stress, unhealthy food and personal habits these people are at a high risk of non-communicable disease like hypertension. This study was taken up to estimate the prevalence of hypertension among bank employees in Kalaburagi city and to study the associated risk factors of hypertension among them. **Methods:** The present study was community based prospective observational study, undertaken in the bank employees carried out in Kalaburagi city, Study was explained to bank employees, those willing to participate in study were included after a written informed consent. **Results:** Among 218 subjects, prevalence of hypertension was 28.44% (62 subjects). Among hypertensive

subjects majority were of age group 51-60 years (76.19 %) followed by 41-50 years (52.27 %), male (33.52 %), manager (55.81 %), from upper class (68.2 %). In present study, hypertension was more common in BMI > 30 kg/m<sup>2</sup> (100.0 %) also more in BMI 30- 35 kg/m<sup>2</sup> (80.64 %) followed by, BMI 25-30 kg/m<sup>2</sup> (23.47%). As blood pressure increases pulse rate was also increases this shows highly significant positive correlation between blood pressure and pulse rate. The prevalence rates of the risk factor of hypertension were as follows:

Smoking 27.5%, Tobacco Chewing 19%, alcohol consumption 40%, sedentary life-style 66%. Dietary habits such as adding extra salt while eating food (23.4 %), eating vegetables (99.9%), eating fast food (72%), eating fruits (92.4%). Nil was common among hypertensive subjects (67%), while very high stress level (28%) was noted among hypertensive subjects. among 218 employees where 2.75% of participants usually sitting 06hr in a day, as follows 60% of 08hr, 31% of 10hr and 6% of 12hr. **Conclusion:** Based on the findings from the current study we can conclude that hypertension is significantly associated with Age > 40 years, male, gender, cadre of employment, BMI > 25 kg/m<sup>2</sup> smoking, smokeless tobacco use, alcohol use and less physical activity. We also found that 24.3% of the participants were classified as pre-hypertensive, which adds to the overall future risk of developing hypertension. Measures for early detection of hypertension required and health education regarding lifestyle modifications is recommended in reducing and controlling the prevalence of hypertension.

**KEYWORDS:** Hypertension, bank employees, risk factors, prevalence, sedentary lifestyle, BMI, JNC 8, obesity.

## INTRODUCTION

Hypertension, the “silent killer” is a modern day’s epidemic and is an increasingly important medical and global public health issue due to its role in causation of coronary heart disease, stroke and other vascular complications. It is defined as systolic blood pressure measuring more than or equal to 140 mm of mercury and diastolic blood pressure measuring more than or equal to 90 mm of mercury recorded in an individual according to JNC7.<sup>[1]</sup>

Adapted from JNC 7 express: The seventh report of the joint national committee on prevention, detection, evaluation and treatment of high blood pressure. Bethesda, MD: National high blood pressure education program, National heart, Lung and blood institute, National institutes of health, US Department of health and human services; may 2003.<sup>[2]</sup>

Hypertension is the leading cause of mortality in the world and is ranked third as a cause of disability-adjusted life years. The developing countries including India is experiencing epidemiological transition from communicable to non-communicable diseases and hypertension has emerged as a significant public health problem in both urban and rural areas. Cardiovascular diseases such as coronary heart disease and stroke are the most frequent causes of deaths in developing countries.<sup>[3]</sup> Epidemiological studies have shown that

sedentary lifestyle, obesity and stress are significant risk factors for hypertension. As bank workers are exposed to these risk factors, it makes them a potential occupational risk group for hypertension and it is important to do screening for hypertension among them.<sup>[4]</sup>

BMI is calculated as weight (in Kg) divided by height squared (in meters). It is used to classify body weight as underweight, healthy weight, overweight, and obesity with obesity grouped into obesity type 1, type 2, and type 3 (morbid obesity). According to WHO (2019b), Hypertension is a sustained increase in blood pressure (BP) above 140/90 irrespective of age and sex. Hypertension can be mild, moderate, or severe; systolic or diastolic; and primary (idiopathic) or secondary. In primary hypertension, the cause is not known but it is associated with family history, high salt intake, obesity, stress, and sedentary lifestyle. Secondary causes of hypertension include kidney diseases, endocrine disorders, pregnancy-induced, drugs, raised intracranial pressure, and vascular abnormalities. It is one of the leading causes of global burden of disease. It is being the root cause of many of the body system and organs failure remains to be a major public health challenge globally.<sup>[5]</sup>

Undiagnosed hypertension is defined as individuals who were hypertensive but did not report having been told by a health professional that they have hypertension. It is an important risk factor for development of chronic kidney disease, cardiovascular disease and all-cause mortality. In 2007, around 50% of the world population were living with undiagnosed hypertension. One out of three adults have hypertension and more than 50% of them are unaware of their status. The burden of undiagnosed hypertension increases with age increases, it ranges from 6.0% in the age group of 18–19 years to 28.7% in the age group of 65–69 years. Its prevalence is also significantly higher in the rural areas 20.7% compared to urban areas 16.1% and regarding sex it is higher in males 18.6% than in females 15.6%.<sup>[6]</sup>

Hypertension is becoming a public health emergency worldwide, with the African region having the highest prevalence of high blood pressure worldwide at 27% in 2021. In addition, some studies projected an increase of 80% in the hypertensive population by 2025. Hypertension is a controllable disease, and a slight decline of 2 mmHg population-wide in BP can prevent 151,000 stroke cases. The prevalence of hypertension has increased by 30 times among the urban population over 55 years and about ten times among the rural population over 36 years.<sup>[7]</sup>

Factors that enhance Chronic Heart Disease risk at work include effort reward model, extremes of temperature, highly alert, vigilant job, decision-making, high responsibility, sudden shift from high risk to low risk job. Shift work, alone, has a propensity to cause CHD.<sup>[8]</sup> According to the global burden of disease (GBD) study in 2017, high systolic blood pressure (SBP) had claimed over 10.4 million lives and 218 million disability-adjusted life years (DALY). Overall, 9% of the total DALYs were attributable to high SBP. High job strain has been associated with significantly higher diastolic blood pressure of 4.5 mmHg during working hours and it has been proven that chefs showed one risk factor more than office workers. As bank workers are exposed to these risk factors, it makes them a potential occupational risk group for hypertension and it is important to do screening for hypertension among them.<sup>[9]</sup>

Hypertension has modifiable as well as non-modifiable factors. Among the modifiable factors, most factors are preventable such as alcohol use, unhealthy diet, tobacco use, physical inactivity, stress, overweight and obesity.<sup>10</sup> Obesity is a recognized clinical entity and implies an excessive accumulation of body fat causing an increase in body weight. Visceral obesity constitutes a significant risk factor for cardiovascular disease. Obesity is caused by the interaction of genetic factors with environmental factors of excessive eating of unhealthy foods and reduced physical activity. Sedentary lifestyle is the leading cause of obesity in this era of technological advancement. Globally, the most acceptable definition of obesity is based on body mass index (BMI).<sup>[11]</sup> Many patients only become aware of their hypertensive status after the development of target organ damage like stroke, hypertensive retinopathy, ischemic heart disease, congestive heart failure, peripheral vascular disease or chronic kidney disease. Management of hypertension involves conducting necessary investigations and treatment. Treatment involves lifestyle modifications including dietary changes, exercise and reduced ingestion of alcohol and smoking. Treatment is aimed at controlling the blood pressure within the normal range using appropriate medications suited for the patient's circumstance using either monotherapy or combination therapy.<sup>[12]</sup>

In India, the prevalence of hypertension is 33.8% in urban areas and 27.6% in rural areas. Hypertension is comparatively more prevalent in executive and service categories in all states of India. There are evidences that long term mental stress is associated with hypertension but more research is needed in this area.<sup>[13]</sup> before the largest reforms, the banking sector was the second highest employer of labour after government.<sup>[14]</sup> The nature of the bank work and the

working environment can have negative impacts on the health of the banker. Posture problems from sitting or standing too long in a static position, vision difficulties from gazing into a computer screen for prolonged periods of time, musculoskeletal disorders, unhealthy eating habits caused by job insecurity, harassment, abuse, bullying, friction etc.<sup>[15]</sup> The job of bank employees is both sedentary in nature and accompanies high mental stress also. In India very few studies have been conducted among bank employees who are at a high risk of being hypertensive.<sup>[16]</sup> there is paucity of information on the prevalence of HTN among bank employees at global level. The prevalence of some chronic diseases like HTN in such populations is documented by very few studies in India and at global level.<sup>[17]</sup> many of these studies have not assessed the risk factors in detail and some reported the prevalence of HTN as a secondary outcome variable. A study of such nature will help us to understand the problem and to make appropriate interventions on a larger scale for the benefit of such a vulnerable group.<sup>[18]</sup> Productive and restructure and reform, economic market globalization automation, outsourcing, job insecurity, long working hours, usage of computer screen for prolonged periods of time, increasing competition and multifunctional task are significantly reshaping bank employees lives professionally as well as personally. Combination of these can lead to posture problems, vision difficulties, musculoskeletal disorders, stress and other life style related disorders (hypertension, obesity, stroke, Diabetes etc.) Management of hypertension requires life-long medication with some lifestyle modifications. The only way to curb the problem of hypertension is by its prevention.<sup>[19]</sup>

The present study was conducted to find out the prevalence and risk factors of. hypertension among bank employees of Kalaburagi City of Karnataka.

## NEED FOR STUDY

Globally, the overall prevalence of Hypertension in adults aged 25 and over was around 40% and was estimated to cause 7.5 million deaths, about 12.8% of the total of all deaths worldwide and the non-communicable diseases and the most important preventable risk factor for premature death worldwide, due to heart disease and stroke.<sup>[20]</sup> Hypertension is the most important modifiable risk factor for coronary heart disease, stroke, congestive heart failure, end stage renal disease and peripheral vascular diseases.<sup>[21]</sup> Number of people with uncontrolled hypertension increased by 70% between 1980 and 2008 The rising epidemic of hypertension is thought to be due to mechanization, population growth and ageing.<sup>[22,23]</sup> By 2025 the number of hypertensive people is expected to increase by 60 % and reach 1.56 billion people.<sup>[24]</sup>

According to the WHO 2008 estimates, the prevalence of raised BP in Indians was 32.5% (33.2% in men and 31.7% in women).<sup>[25]</sup> However, only about 25.6% of treated patients had their BP under control, in a multicenter study from India on awareness, treatment, and adequacy of control of HTN.<sup>[26]</sup> The job of bank employees is both sedentary in nature and accompanies high levels of mental stress, thereby at a higher risk of developing hypertension. Many modified factor contribute to the current high prevalence rates of hypertension. They include overweight, obesity, harmful use of alcohol, physical inactivity, eating food containing too much salt, in adequate intake of fruits and vegetable, socio economic determination etc.

Studies on prevalence and risk factors of hypertension among bank employees are spars in India and it is imperative that studies must be carried on to have an insight into the magnitude of the problem among the human resource employed and working there hence this study.

## LITERATURE REVIEW

**1. Ismail I M., et al (2013)** has conducted a study on prevalence of hypertension and its risk factors among bank employees of Sulli Taluk, Karnataka. Data was collected using a pre-tested, semi-structured questionnaire. Blood pressure was measured following JNC 7 criteria. Analysis of data was performed using the Statistical Package for the Social Sciences version 17.  $P < 0.05$  was considered to be significant. A total of 117 bank employees including 18 managers/assistant managers, 33 officers and 66 clerks participated in the study. The prevalence of hypertension was 39.3%. Increasing age, family history of hypertension, body mass index  $\geq 25$  kg/m<sup>2</sup> and abnormal waist-hip ratio were significantly more frequent among the hypertensive than normotensive population.<sup>[3]</sup>

**2. Khaild S M., et al (2022)** has conducted a study on Hypertension and Associated Risk Factors among the Sudanese Banking Sector in River Nile State: A Descriptive Cross-Sectional Study. A descriptive cross-sectional study was performed on Atbara and Al-Dammar localities' banks in River Nile state from January to March 2020. Data were collected on demographics, BMI, waist circumference (WC), medical history, family history, nutritional habits, physical activities, medications history, work stress, complaints, and blood pressure. Ninety-eight bank employees were enrolled, with elevated blood pressure present in 45(45.9%) participants, of whom 18 (40%) were newly diagnosed. 43.9% were in the age group 31-40 years. High blood pressure was significantly associated with older age  $>40$  years, BMI  $> 30$  kg/m<sup>2</sup>, WC  $> 90$  cm, diabetes mellitus (DM), smoking, family history, salty diet, reduced daily exercise (30 minutes



per day), severe stress at work, with overall P-value = <0.005.<sup>[7]</sup>

**3. Kulkarni P P., et al (2022)** has carried out prospective, observational Study on prevalence of hypertension in bank employees of Latur city of Maharashtra. Among 370 subjects, prevalence of hypertension was 32.97 % (122 subjects). Among 370 subjects, prevalence of hypertension was 32.97 % (122 subjects). Among hypertensive subjects majority were of age group 41-50 years (38.89 %) followed by 31-40 years (22.79 %), male (34.39 %), managerial staff (63.16 %), from private sector (44.19 %). In present study, hypertension was more common in BMI > 30 kg/m<sup>2</sup> (82.76 %), followed by BMI 25- 30 kg/m<sup>2</sup> (56.58%). High incidence of addictions such as smoking (57.63 %), smokeless tobacco use (61.54%), alcohol use (67.44 %) was noted among hypertensive subjects. Dietary habits such as adding extra salt while eating food (53.42 %), eating foods with high salt content (53.57 %), eating junk food (70.49 %), eating fruits.<sup>[9]</sup>

**4. Kumar S G., et al (2014)** has conducted a cross sectional study on Prevalence and Risk Factors of Hypertension among Bank Employees in Urban Puducherry, India. 192 (128 male and 64 female) bank employees from 12 nationalized banks in urban Puducherry, India. Blood pressure was measured and classified according to the Joint National Committee (JNC) VII criteria. Data was analyzed by Chi-square test and multiple logistic regression analysis. The mean±SD age of the participants was 39.5±10.6 years. The prevalence of hypertension and pre-hypertension was 44.3% and 41.1% respectively. Of 85 participants with hypertension, 47 (55%) was known case and 38 (45%) were newly diagnosed. Multiple logistic regression analysis revealed that living in the 4th or 6th decade of life, consumption of extra salt, and physical activity ≥2 hours per day were associated with hypertension among bank employees.<sup>[18]</sup>

**5. Shekhar S., et al (2020)** has conducted a cross-sectional observational study was carried out between January 2016 to December 2016 among all the bank employees working in urban area of Latur, Maharashtra. Approval from institutional ethics committee was obtained beforehand. Total 577 bank employees were surveyed for this study. 32.4% of subjects were found to be hypertensive. Association of higher age group and managerial cadre of employment were found to be statistically significant.<sup>[27]</sup>

**6. Degne H., et al (2021)** has carried out a cross sectional descriptive study on Prevalence of Hypertension and Associated Factors among Bank Workers in Harar Town, Eastern Ethiopia.

The target population was conducted on Bank Workers of Harar town by taking a total sample size of 149 and physical measurement based. Self-Administered questioners were disseminated and recollected from the selected respondents and the physical measurement part was filled by the data collector. Prevalence was computed with a 95% confidence interval. A total of 149 participants were approached with a response rate of 143 (96.4%). The prevalence of Hypertension in the study was 27.5%. Aging, Sedentary lifestyle, and BMI (Obesity) in this study were positively associated with higher odds of having hypertension.<sup>[28]</sup>

**7. Shitu k., et al (2021)** has carried out a study on Behavioral and Sociodemographic Determinants of Hypertension and Its Burden among Bank Employees in Metropolitan Cities of Amhara Regional State, Ethiopia an institution-based cross-sectional study was conducted among 368 bank employees. A simple random sampling technique was used to select participants The overall prevalence of hypertension among bank employees was 52.4% (95% CI: 47.2, 57.7). Increased age (AOR = 1.1, 95% CI: 1.03, 1.11), male sex (AOR = 2.5, 95% CI: 1.2, 5.1), overweight (AOR = 2.7, 95% CI: 1.5, 5.2), obesity (AOR = 5.6, 95% CI: 2.0, 11.3), moderate/high physical activity (AOR = 0.36, 95% CI: 0.2, 0.62), daily fruit intake (AOR = 0.1, 95% CI: 0.04, 0.3), stressful life event experience (AOR = 1.8, 95% CI: 1.01, 3.4), family history of hypertension (AOR = 2.8, 95% CI: 1.5, 5.4), and poor knowledge of CVDs (AOR = 2.4, 95% CI: 1.2, 4.8) were significantly associated with hypertension.<sup>[29]</sup>

**8. Momin M., et al (2009)** has conducted a study on Effect of Life Style Risk Factors on Prevalence of Hypertension among White Collar Job People of Surat. It was a cross sectional study carried out from August, 2004 to September, 2005. Study was carried out among bank employees of all sectors like Government, Private and Co-operative, situated within Surat city limits, an urban area of South Gujarat. Total 1493 bank employees were studied (1177 males and 316 females). Hypertension was defined on the basis of 7th report of Joint National Committee result: Overall prevalence of hypertension was found to be 30.4 % (455/1493). Among 455(30.4%) hypertensives, only 197(43%) were aware about their hypertensive status. And among these known hypertensive, 139(70.5%) were on regular treatment. 71(51%) were having controlled hypertension among the employees who were on regular treatment.<sup>[30]</sup>

**9. Hinson A V., et al (2019)** has conducted a study on Epidemiological Aspects of the High Blood Pressure in Occupational Environment-Case of a Bank in Cotonou (Benin). This was a descriptive and transversal study of bank workers in Cotonou (Benin). The data were collected using the World Health Organization (WHO) STEP wise questionnaire adapted to our context,



as well as blood pressure (BP), weight and abdominal perimeter measurement. Using bivariate and multivariate analysis, we analyzed the risk factor of the HBP. The average age was  $37.9 \pm 8.6$  years; the predominance was with men (52.0%). The prevalence of hypertension was 25.3%. The multivariate analysis showed a significant relationship between the occurrence of hypertension and age, lack of knowledge about preventive measures against hypertension, work under pressure and obesity. There is a significant relationship between hypertension and workstation ( $p=0.0113$ ).<sup>[31]</sup>

**10. Momin M H., et al (2012)** has conducted a study of socio-demographic factors affecting prevalence of hypertension among bank employees of Surat City. Prevalence of hypertension was 30.4% and prehypertension was 34.5%. Out of 455 found as hypertensive, 258 (56.70%) were not having any symptoms at the time of examination. Prevalence was high among persons with age 50 years and above (48.5%); among male (32.5%) as compared to female (23.1%); among employees having small family size; among separated/divorcee person (40.0%). Prevalence of hypertension increased with seniority of the official position of bank employee with highest prevalence among managers (45.9%). Prevalence of hypertension was noted highest among the higher socioeconomic group; SEC I (35.0%) followed by class II (20.4%). Effects of different risk factors of hypertension were observed here. This study may help in identifying the common profile of hypertensive or persons at risk.<sup>[32]</sup>

**11. Manandhar N. (2017)** has conducted a study on Associated Risk Factors of Hypertension at Sipaghat of Sindhupalchowk District, Nepal. A cross-sectional study was conducted at Sipaghat of Sindhupal chowk district in May 2016 and 260 persons were selected randomly. The prevalence of hypertension was higher in male (25.4%) than female (17.4%). Mean age of study population was 42.08 years with standard deviation, 15.95 years. Variables namely age group, smoking, alcohol consumption and family history of hypertension were found to be significant at 5 percent level of significance. Alcohol consumption and smokers have more than two times higher chance of getting hypertension compared to alcohol non-consumer and nonsmoker with 95% confidence intervals were 1.08-4.80 and 1.21-6.10, respectively. Persons with family history of hypertension have 3.8 times more chance of getting hypertension compared to no family history of hypertension with 1.89-7.61 of 95% confidence interval.<sup>[33]</sup>

**12. Maroof K A., et al (2007)** has conducted a Study on Hypertension among the Bank Employees of Meerut District of Uttar Pradesh. Hypertension is becoming a public health

emergency worldwide, especially in the developing countries. The job of bank employees is both sedentary in nature and accompanies high levels of mental stress, thereby at a higher risk of developing hypertension. The present cross-sectional study was conducted to find out the prevalence and the determinants of hypertension among bank employees of Meerut district. Prevalence of hypertension was found to be 69.5% Hypertension was significantly associated with age 45 years, alcohol intake, waist circumference, body mass index and diabetes.<sup>[34]</sup>

**13. Montazerifar F., et al (2017)** has conducted a study on Prevalence of Obesity and Hypertension and Related Factors among Bank Employees in Zahedan. It was a cross-sectional study, 350 employees aged 23 to 57 years were randomly selected out of 15 bank branches from December 2016 to February 2017. Body mass index (BMI) was assessed for the determination of general obesity. In addition, waist circumference (WC) and waist-to-height ratio (WHtR) were measured for the evaluation of abdominal obesity. Two recordings of blood pressure (BP) were obtained in a sitting position. Finally, a multivariate logistic regression analysis was used to examine the independent predictors of hypertension. The prevalence of pre-hypertension and hypertension were 33.1% and 61.1%, respectively. Further, the rates of overweight and obesity were 49.1% and 10.3%, respectively. Furthermore, elevated WC and high WHtR were 20.9% and 59.4%, respectively.<sup>[35]</sup>

**14. Jafari-Shakib A., et al (2016)** has conducted a study on LBPS Hypertension is more prevalent in bank employee in comparison to normal Population. This was a cross sectional screening study in a representative sample of three main Banks in northern Iran. Subjects 30-year-old and older were interviewed and examined by a trained research team. Blood samples were drawn for biochemical testing. Data analysis was done using SPSS 14 software and  $\chi^2$  test. A total of 595 persons [526men (88.4%) and 69 women (11.6%)] aged 30 to 59 years with mean age of  $43 \pm 6.1$  years were enrolled. prevalence of hypertension among this population was 14.5%. Overweight and obesity were prevalent in this group as 52% and 24.5% respectively. 12.9% was current smoker. There were significant differences between hypertension rate and BMI groups and diabetes ( $p < 0.05$ ) but no differences were seen between hypertension and dyslipidemia and cigarette smoking.<sup>[36]</sup>

**15. Shah Y., et al (2021)** has conducted a study on Health profile of bank employees of Ahmedabad city. A cross sectional study was carried out among 360 government & 240 private bank employees of Ahmedabad city. Prevalence of musculoskeletal and gastrointestinal problems were found slightly higher in private bank employees (55.42% & 32.88%

respectively) than government bank employees (50.28% & 30.28% respectively), while ocular problems were found higher in government bank employees. Overall prevalence of hypertension & diabetes was found 25.67% & 13.17% respectively. 29.17% employees were partially satisfied with their job while 63.67% employees were fully satisfied, but still more than half (51.17%) employees were experiencing job stress.<sup>[37]</sup>

### **AIM OF THE STUDY**

- To determine the prevalence and awareness of hypertension and its associated risk factors among bankers in Kalaburagi city.

### **OBJECTIVES**

- To assess the prevalence of hypertension in Bank Employees.
- To assess the associated risk factors.
- To assess the relation between socio-economic status and prevalence of Hypertension.
- To know the awareness of hypertension among the bank employees.

### **METHODOLOGY**

#### **PLAN OF THE STUDY**

**DURATION OF STUDY:** The study was conducted for a period of 6 months (March 2022- August 2022).

**STUDY SITE:** The Study was carried out in Kalaburagi city.

**STUDY DESIGN:** Community based prospective observational study.

**SAMPLE SIZE:** 218 participants.

#### **SOURCE OF DATA**

: Consent Form.

: Self structure questionnaire.

: Data collection form.

#### **INCLUSION CRITERIA**

- The data is collected among bank employees of age >25yrs of Kalaburagi city.

#### **EXCLUSION CRITERIA**

- Employees with tertiary stage and above hypertension, use of any hypertensive drug in the previous 1-month, Clinical diagnosis of [CVD, KD & LD] Self-adherence to a low sodium diet is excluded from the study in Bank Employees.

- Pregnant female employees & Employees working on contract bases.
- Those not willing to participate.

## STUDY PROCEDURE

The present study was conducted among employees of banks located in Kalaburagi city, Karnataka, South India. Prior permission from the institutional review board (IRB) was taken before starting the study.

A prospective observational study was conducted from March 2022 to August 2022 for 6 months. Study was explained to senior bank officials and when requested for conducting the study in their branches persuaded to include all the employees in the area. Thus 218 employees were considered for our study.

Employees willing to participate in the study were include in the study after a written informed consent. Peon, pregnant female employees, employees working in contract basis were excluded.

The interview technique was used as a tool for data collection. The predesign and pretested questionnaire include general information and socio demographic details of study subject, age, gender, marital status, education and cadre of the employment, type of bank were recorded for each study subject. Predesigned questionnaires was taken from WHO to manage HTN. All the selected employees were instructed collectively and their queries were fulfilled.

*(Data collected was compiled and analyzed by using Microsoft excel, SPSS-22.)*

Medical and personal history was collected in details for pre-existing hypertension, diabetes, cardiovascular illness any addiction (smoking, alcohol consumption, tobacco chewing etc.) physical activity, dietary details (salt consumption), life style and stress. History taking was followed general examination and blood pressure measurement of the individual.

The measurement are taken in the following the way.

- Height
- Weight
- BMI
- Blood Pressure
- Physical activity level and mental stress

## MEASUREMENT

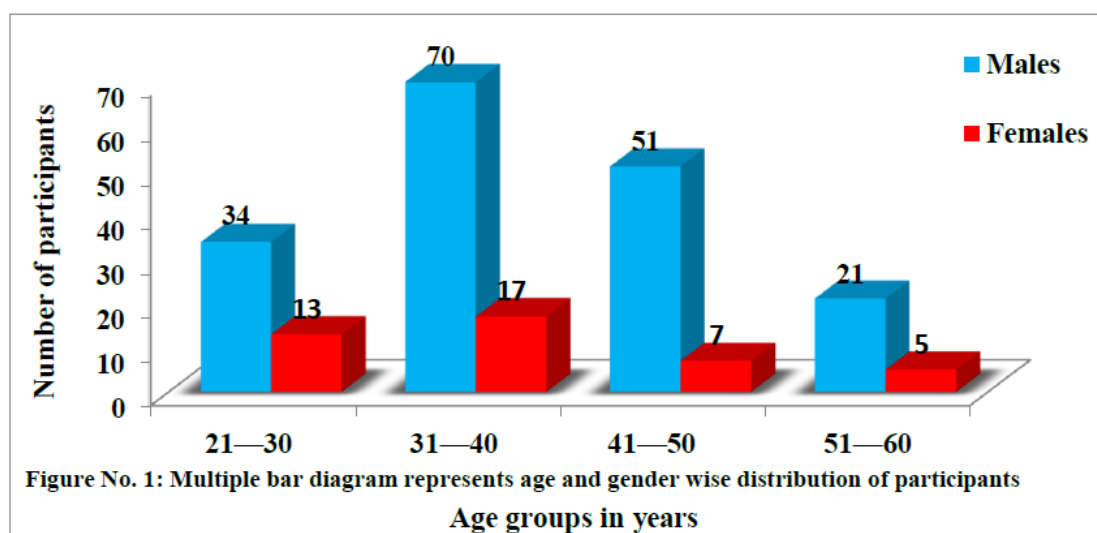
- **Height:** After removal of foot wear, the subject was asked to stand with the back against the wall and heels touching the ground. Reading was noted with the help of standard non stretchable measuring tape.
- **Weight:** Weight was recorded in kilograms (with minimal clothing and removal of foot wear) using a weighing machine.
- **BMI:** Body Mass Index was calculated by using the formula (weight in Kg/ height in m<sup>2</sup>) and classified according to the WHO defined BMI categories.
- **Measurement of blood pressure:** Blood pressure was measured and classified as per the JNC-7 guideline. Participants were seated quietly for at least 5 minutes in a chair with feet on the floor and Right arm was borne and supported at heart level. A standard sphygmomanometer and a standard stethoscope were used to ensure accuracy. 2 readings of blood pressure were taken from each individual at 5-5-minute interval using right arm consistently and the average recorded.
- **Physical activity level and mental stress:** is measured using Questionnaire which are selected from WHO. It consists of 20 questions which were answered in yes/no and other options marking by the participants.

## OBSERVATION

**Table No. 1: Table depicting Age and gender wise distribution of participants (Bank Employees).**

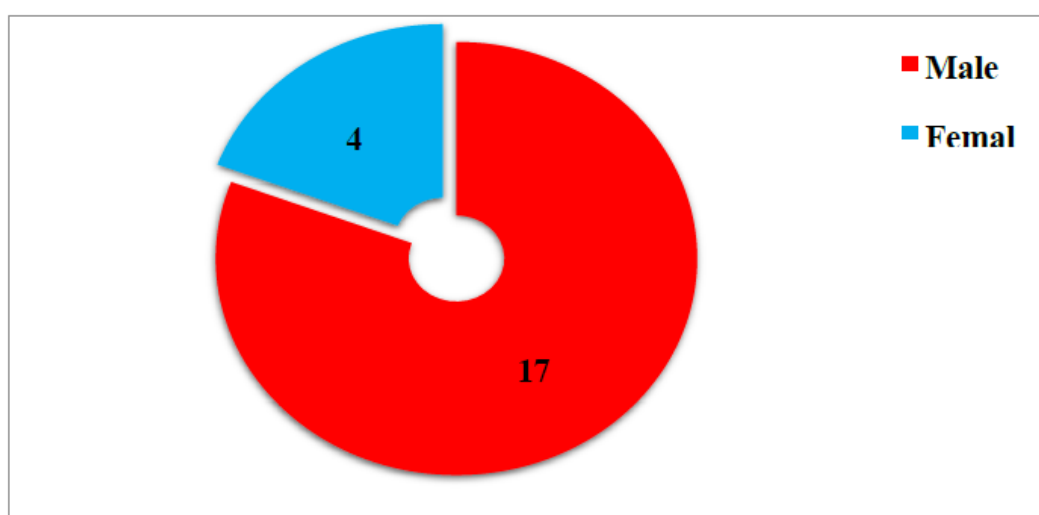
| Age in years           | Males                    |       | Females      |       | Total        |       |
|------------------------|--------------------------|-------|--------------|-------|--------------|-------|
|                        | No.                      | %     | No.          | %     | No.          | %     |
| 21—30                  | 34                       | 19.3  | 13           | 30.9  | 47           | 21.5  |
| 31—40                  | 70                       | 39.8  | 17           | 40.5  | 87           | 39.9  |
| 41—50                  | 51                       | 29.0  | 7            | 16.7  | 58           | 26.7  |
| 51—60                  | 21                       | 11.9  | 5            | 11.9  | 26           | 11.9  |
| Total                  | 176                      | 100.0 | 42           | 100.0 | 218          | 100.0 |
| Mean ± SD              | 39.22 ± 8.75             |       | 36.67 ± 8.60 |       | 38.73 ± 8.74 |       |
| t-test, P-value & Sign | t = 1.709, P = 0.089, NS |       |              |       |              |       |

NS= not significant, S=significant, HS=highly significant



**Figure No. 1: Multiple bar diagram represents age and gender wise distribution of participants.**

**DESCRIPTION:** Majority of participants 87 (39.9%) were belongs to the age group of 31-40 years. followed by 58 (26.7%) of participants were belong to the age group of 41-50 years and 47 (21.5%) of participants were belongs to the age group of 21-30 years. The mean age of all participants is 38.73 years, males mean age was 39.22 years and females mean age was 36.67 years. There is no statistically significant difference of mean age of participants between males and females ( $P>0.05$ ).



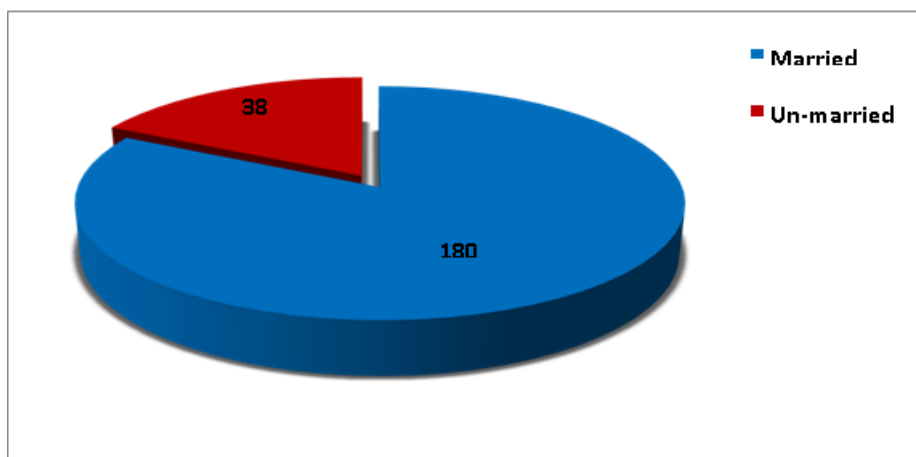
**Figure No. 2: Pie diagram represents gender wise distribution of cases.**

**DESCRIPTION:** In the study males are predominant 176 (80.7%) of participants and females are 42 (19.3%) of participants. Male to female ratio was 4.2:1.



**Table No. 2: Table depicting marital status wise distribution of participants.**

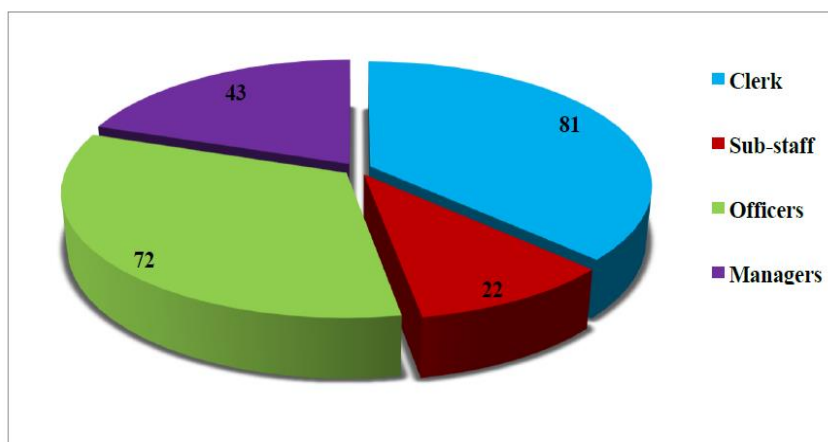
| Marital status | Number of participants | Percentage |
|----------------|------------------------|------------|
| Married        | 180                    | 82.5       |
| Un-married     | 38                     | 17.5       |
| Total          | 218                    | 100.0      |

**Figure No. 3: Pie diagram represents marital status wise distribution of case.**

DESCRIPTION: Study observed that, Out of 218 participants or Bank employees; 180 (82.5%) of participants were married and 38 (17.5%) of participants were un-married.

**Table No. 3: Table depicting cadre wise distribution of participants.**

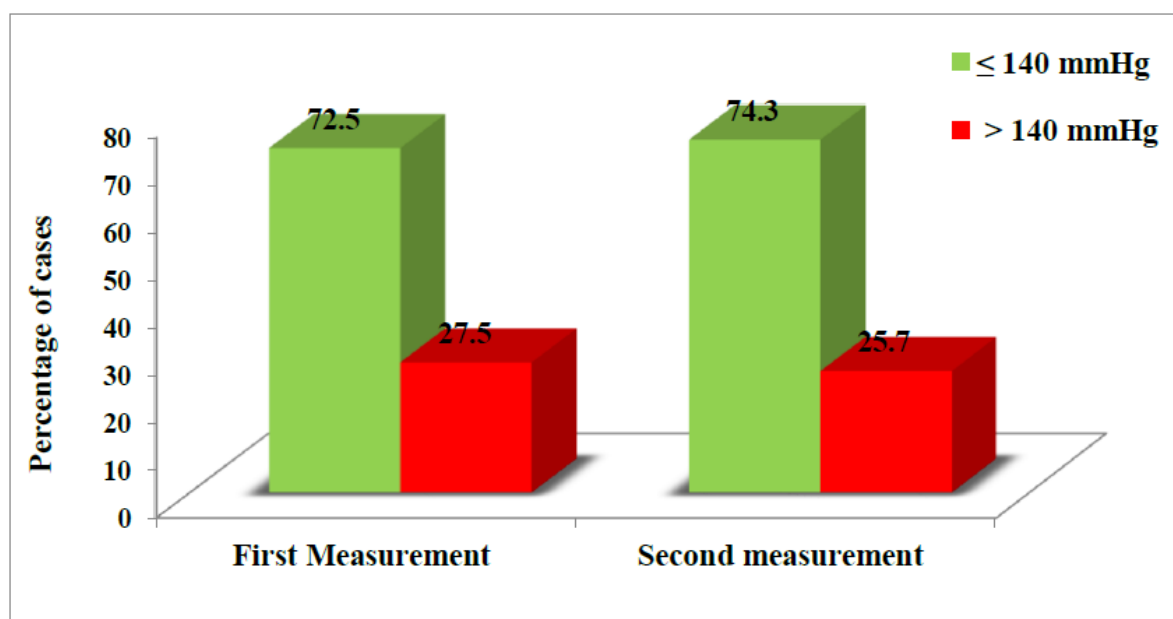
| Cadre     | Number of participants | Percentage |
|-----------|------------------------|------------|
| Clerk     | 81                     | 37.2       |
| Sub-staff | 22                     | 10.1       |
| Officers  | 72                     | 33.0       |
| Managers  | 43                     | 19.7       |
| Total     | 218                    | 100.0      |

**Figure No. 4: Pie diagram represents cadre wise distribution of participants.**

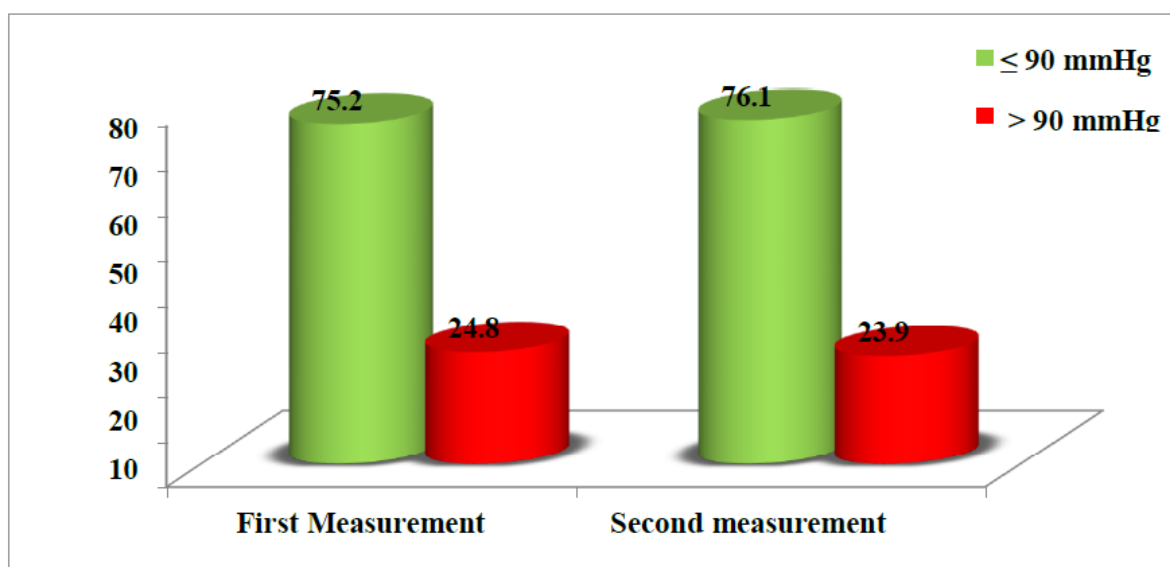
DESCRIPTION: Study observed that, out of 218 participants or Bank employees; 81 (37.2%) of participants were working as clerks, 72 (33.0%) of participants were working as officers, 43 (19.7%) of participants working as managers and 22 (10.1%) of participants were working as sub-staff

**Table No. 4: Table depicting distribution of participants according to measurement of Blood Pressure.**

| Blood pressure               |          | First Measurement        |       | Second measurement |       |
|------------------------------|----------|--------------------------|-------|--------------------|-------|
| Type                         | Category | NO.                      | %     | NO.                | %     |
| Systolic BP                  | ≤ 140    | 158                      | 72.5  | 162                | 74.3  |
|                              | > 140    | 60                       | 27.5  | 56                 | 25.7  |
| Total                        | ---      | 218                      | 100.0 | 218                | 100.0 |
| Mean ± SD                    | -----    | 132.08 ± 18.18           |       | 133.22 ± 17.65     |       |
| t-Test value, P-value & sig. |          | t = 0.661, P = 0.509, NS |       |                    |       |
| Diastolic BP                 | ≤ 90     | 164                      | 75.2  | 166                | 76.1  |
|                              | > 90     | 54                       | 24.8  | 52                 | 23.9  |
| Total                        | ----     | 218                      | 100.0 | 218                | 100.0 |
| Mean ± SD                    | ---      | 87.26 ± 8.95             |       | 87.74 ± 8.94       |       |
| t-Test value, P-value & sig. |          | t = 0.555, P = 0.579, NS |       |                    |       |



**Figure No. 5: Multiple bar diagram represents first and second measurement of Systolic Blood Pressure.**



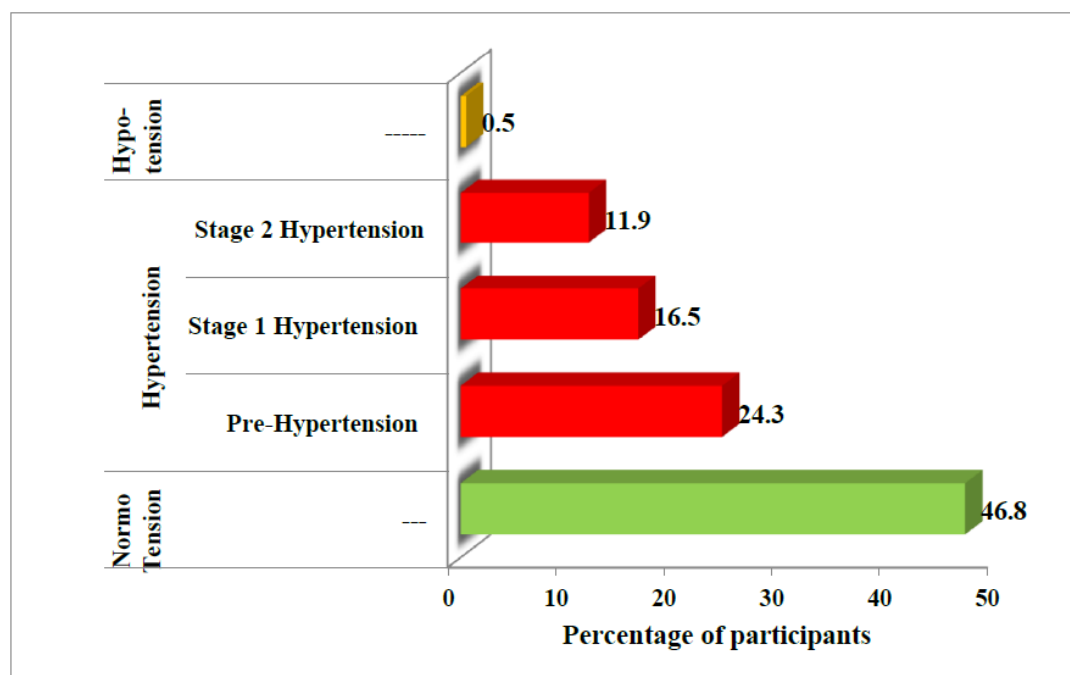
**Figure No. 6:** Multiple bar diagram represents first and second measurement of diastolic Blood Pressure.

DESCRIPTION: Study observed that; in the first measurement of systolic blood pressure 60 (27.5%) of participants showed hypertensive (>140mmHg) and from the second measurement 56 (25.7%) of participants showed hypertensive. As per diastolic blood pressure 54 (24.8%) of participants were hypertensive (>90mmHg) in first measurement, 52 (23.9%) of participants in the second measurement shows hypertensive.

The mean systolic blood pressure at first measurement was 132.08 and second measurement was 133.22. And the mean diastolic blood pressure at first measurement was 87.26 and second measurement was 87.74. There is no statistically significant difference of mean SBP and DBP between first and second measurements ( $P>0.05$ ).

**Table No.5:** Table depicting prevalence and classifications of hypertension.

| Diagnosed BP            | Classifications             | Number of Participants | Percentage |
|-------------------------|-----------------------------|------------------------|------------|
| <b>Normo Tension</b>    | ---                         | 102                    | 46.8       |
| <b>Pre-Hypertension</b> | ---                         | 53                     | 24.3       |
| <b>Hypertension</b>     | <b>Stage 1 Hypertension</b> | 36                     | 16.5       |
|                         | <b>Stage 2 Hypertension</b> | 26                     | 11.9       |
| <b>Hypotension</b>      | ----                        | 1                      | 0.4        |
| <b>Total</b>            | ----                        | 218                    |            |

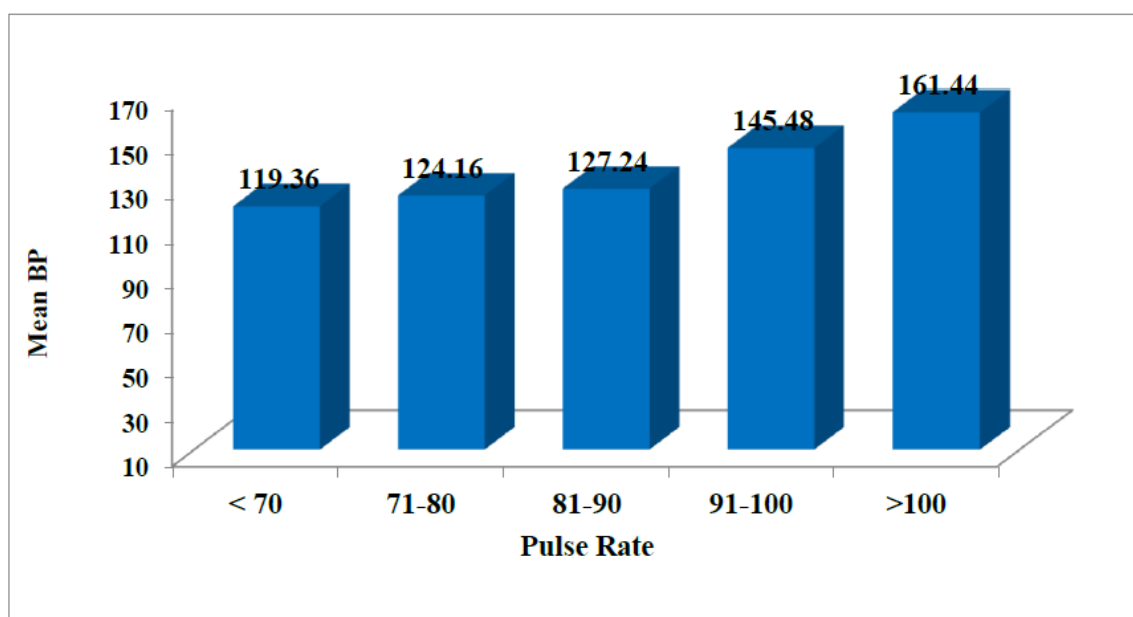


**Figure No. 7: Bar diagram represents prevalence and classifications of hypertension.**

DESCRIPTION: The prevalence rate of hypertension of Bank employees is 53.2%. Incidence of pre-hypertension is 24.3%. Among 62 (28.44%) of hypertension participants, 36 (31.3%) of participants had stage 1 hypertension and 26 (22.6%) of participants had stage 2 hypertension. Only 1 (0.5%) of participant had seen hypotension.

**Table No.6: Table depicting comparison of blood pressure with pulse rate.**

| Pulse Rate               | Number of participants (%)                             | Blood Pressure     | ANOVA test, Value         | P- |
|--------------------------|--------------------------------------------------------|--------------------|---------------------------|----|
|                          |                                                        | Mean $\pm$ SD      |                           |    |
| < 70                     | 11 (5.0%)                                              | 119.36 $\pm$ 11.41 | F = 27.06<br>P = 0.000 HS |    |
| 71-80                    | 55 (25.2%)                                             | 124.16 $\pm$ 10.25 |                           |    |
| 81-90                    | 91 (41.8%)                                             | 127.24 $\pm$ 13.19 |                           |    |
| 91-100                   | 52 (23.9%)                                             | 145.48 $\pm$ 18.24 |                           |    |
| >100                     | 9 (4.1%)                                               | 161.44 $\pm$ 28.64 |                           |    |
| Total                    | 218 (100.0%)                                           | 132.08 $\pm$ 18.18 |                           |    |
| Correlation co-efficient | r = 0.540, P=0.000, Highly significant +ve correlation |                    |                           |    |



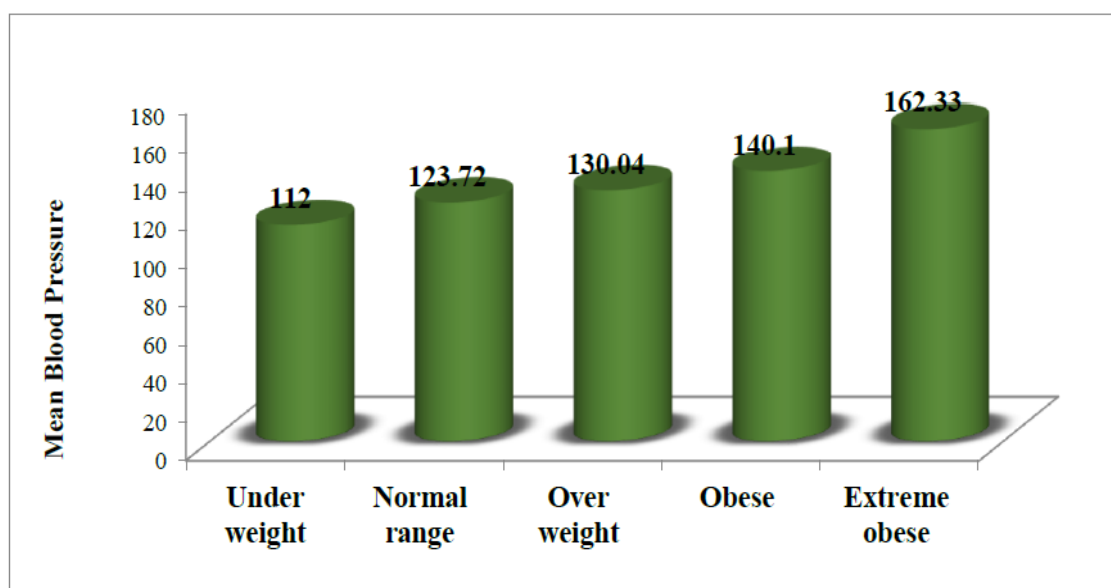
**Figure No. 8:** Simple bar diagram represents comparison of blood pressure with pulse rate.

**DESCRIPTION:** In the study maximum number 91 (41.7%) of participants were observed the pulse rate in the range of 81-90, followed by 55 (25.2%) participants pulse rate in the range of 71-80 and 52 (23.9%) participants pulse rate was in the range of 91-100. The Mean pulse was 85.84.

There was statistically highly significant difference of mean SBP with respect to pulse rate ( $P < 0.001$ ). As blood pressure increases pulse rate was also increases this shows highly significant positive correlation between blood pressure and pulse rate ( $P < 0.001$ ).

**Table No. 7:** Table depicting Comparison of blood pressure with BMI.

| BMI                      | Categories                                             | No. of participants (%) | Blood Pressure     | ANOVA test, P-Value        |
|--------------------------|--------------------------------------------------------|-------------------------|--------------------|----------------------------|
|                          |                                                        |                         | Mean $\pm$ SD      |                            |
| < 18.5                   | Under weight                                           | 1 (0.5%)                | 112                | F = 22.514<br>P = 0.000 HS |
| 18.6—24.9                | Normal range                                           | 64 (29.4%)              | 123.72 $\pm$ 11.15 |                            |
| 25.0—29.9                | Over weight                                            | 115 (52.7%)             | 130.04 $\pm$ 13.36 |                            |
| 30.0—34.9                | Obese                                                  | 31 (14.2%)              | 140.10 $\pm$ 18.00 |                            |
| 35.0—39.9                | Extreme obese                                          | 7 (3.2%)                | 162.33 $\pm$ 22.37 |                            |
| Total                    | ---                                                    | 218 (100.0%)            | 132.08 $\pm$ 18.18 | ----                       |
| Correlation co-efficient | r = 0.440, P=0.000, Highly significant +ve correlation |                         |                    |                            |

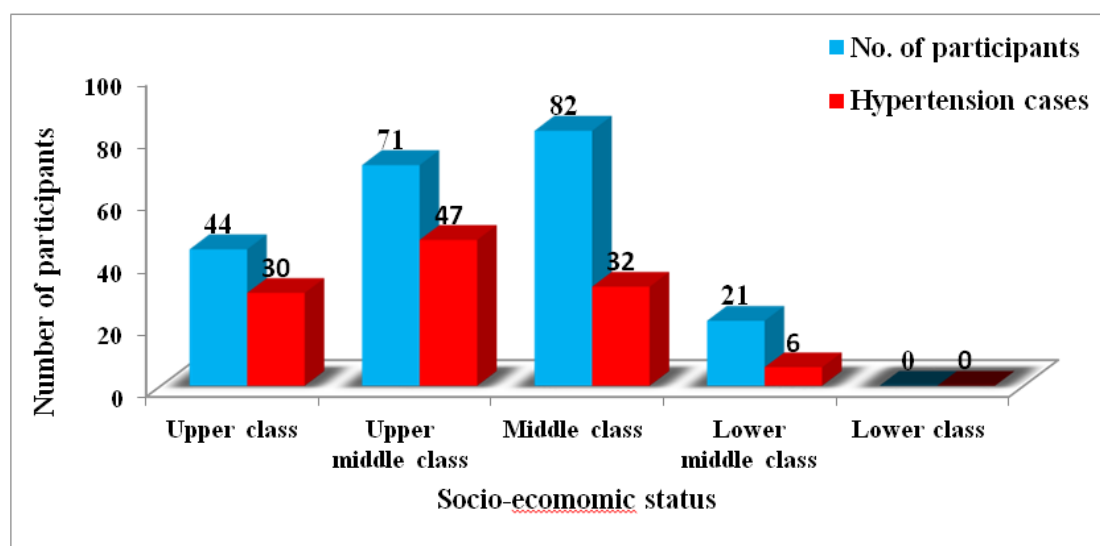


**Figure No. 9: Simple bar diagram represents comparison of BMI with Blood pressure.**

DESCRIPTION: In the study maximum number 115 (52.7%) of participants were overweight (BMI was 25.0--29.9), followed by 64 (29.4%) of participants were normal range of BMI, 31 (14.2%) participants were obese and 7 (3.2%) of participants were extreme obese. There was statistically highly significant difference of mean SBP with respect to BMI ( $P < 0.001$ ). As Higher the BMI shows higher the blood pressure; this shows highly significant positive correlation between BMI and blood pressure ( $P < 0.001$ ).

**Table No. 8: Table depicting comparison of blood pressure with socio-economic status.**

| SES<br>(B G Prasad<br>classification) | Categories         | No. of<br>participants | Hypertension | X <sup>2</sup> - test,<br>P-Value            |
|---------------------------------------|--------------------|------------------------|--------------|----------------------------------------------|
|                                       |                    |                        | No. (%)      |                                              |
| 1                                     | Upper class        | 44                     | 30 (68.2%)   | X <sup>2</sup> =<br>18.32<br>P = 0.007<br>HS |
| 2                                     | Upper middle class | 71                     | 47 (66.2%)   |                                              |
| 3                                     | Middle class       | 82                     | 32 (39.0%)   |                                              |
| 4                                     | Lower middle       | 21                     | 6 (28.5)     |                                              |
|                                       | Class              |                        |              |                                              |
| 5                                     | Lower class        | 0                      | 0 (0.0%)     |                                              |
| Total                                 | ---                | 218                    | 115 (52.7%)  |                                              |



**Figure No. 10: Multiple bar diagram represents comparison of blood pressure with socio-economic status.**

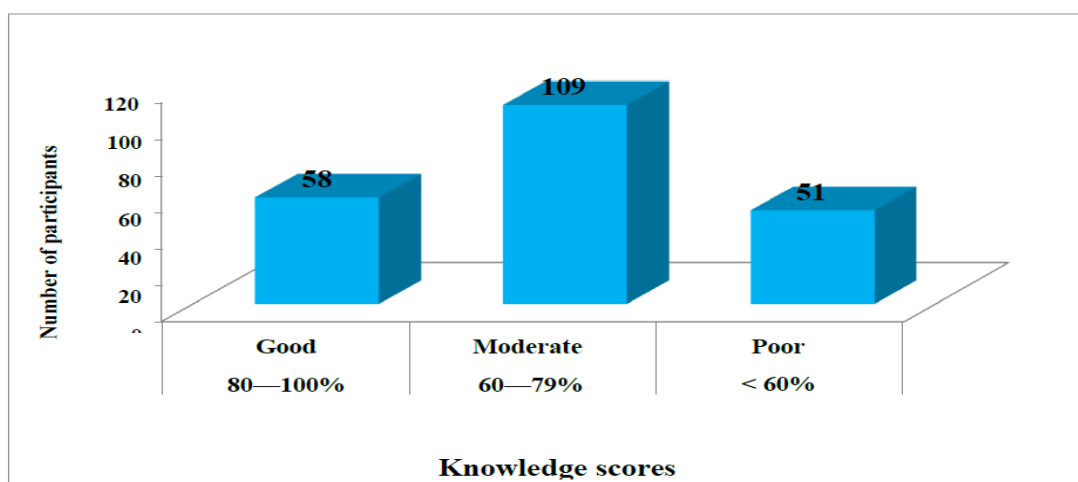
DESCRIPTION: In the study majority of participants 82 (37.6%) were belongs to the middle-class bank employees, followed by 71 (32.0%) of participants were belongs to upper middle class, 44 (20.2%) of participants were belongs to Upper class and 21 (9.6%) of participants were belong to lower middle class, no participants were observed in the lower class. Among the upper class 30 (68.2%) of participants were hypertensive, in the upper middle class 47 (66.2%) of participants were hypertensive, in the middle class 32 (39.0%) of participants were hypertensive. There was significant association between socio-economic status and hypertension ( $P < 0.01$ ).

**Table No. 9: Table depicting knowledge or awareness of hypertension wise distribution of participants.**

| Percentage of Knowledge scores | Categories | No. of participants | Percentage |
|--------------------------------|------------|---------------------|------------|
| 80—100%                        | Good       | 58                  | 26.6       |
| 60—79%                         | Moderate   | 109                 | 50.0       |
| < 60%                          | Poor       | 51                  | 23.4       |
| Total                          | --         | 218                 | 100.0      |

Knowledge of hypertension was assessed by 20 questions and the scores were distributed percentage wise.



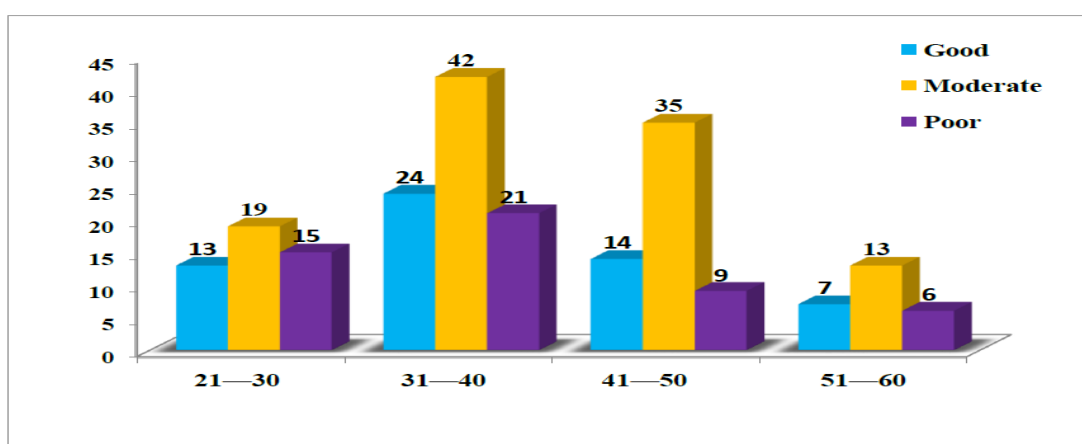


**Figure No. 11:** Simple bars represent knowledge of hypertension wise distribution of participants.

DESCRIPTION: In the present study out of 218 sample of bank employees or participants, 109 (50.0%) of participants had moderate knowledge of hypertension, 58 (26.6%) of participants had good knowledge of hypertension and 51 (23.4%) of participants had poor knowledge.

**Table No. 10:** Table depicting Age wise comparison of knowledge of hypertension.

| Age in years                   | No. of participants | Knowledge scores                      |          |      |
|--------------------------------|---------------------|---------------------------------------|----------|------|
|                                |                     | Good                                  | Moderate | Poor |
| 21—30                          | 47                  | 13                                    | 19       | 15   |
| 31—40                          | 87                  | 24                                    | 42       | 21   |
| 41—50                          | 58                  | 14                                    | 35       | 9    |
| 51—60                          | 26                  | 7                                     | 13       | 6    |
| Total                          | 218                 | 58                                    | 109      | 51   |
| X <sup>2</sup> - test, P-Value |                     | X <sup>2</sup> = 3.732, P = 0.341, NS |          |      |

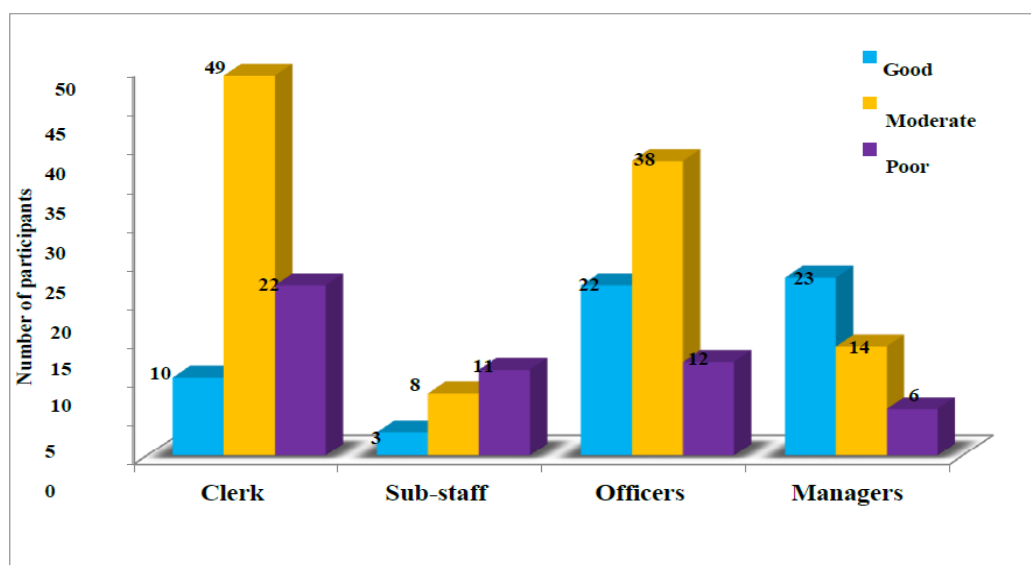


**Figure No. 12:** Multiple bar diagram represents age wise comparison of knowledge of hypertension.

DESCRIPTION: Study reveals that there was no statistical significance difference of distribution of participants according to knowledge ( $P > 0.05$ ).

**Table No. 11: Table depicting cadre wise comparison of knowledge of hypertension.**

| Cadre                 | No. of participants              | Knowledge scores |          |      |
|-----------------------|----------------------------------|------------------|----------|------|
|                       |                                  | Good             | Moderate | Poor |
| Clerk                 | 81                               | 10               | 49       | 22   |
| Sub-staff             | 22                               | 3                | 8        | 11   |
| Officers              | 72                               | 22               | 38       | 12   |
| Managers              | 43                               | 23               | 14       | 6    |
| Total                 | 218                              | 58               | 109      | 51   |
| $X^2$ - test, P-Value | $X^2 = 10.762$ , $P = 0.028$ , S |                  |          |      |

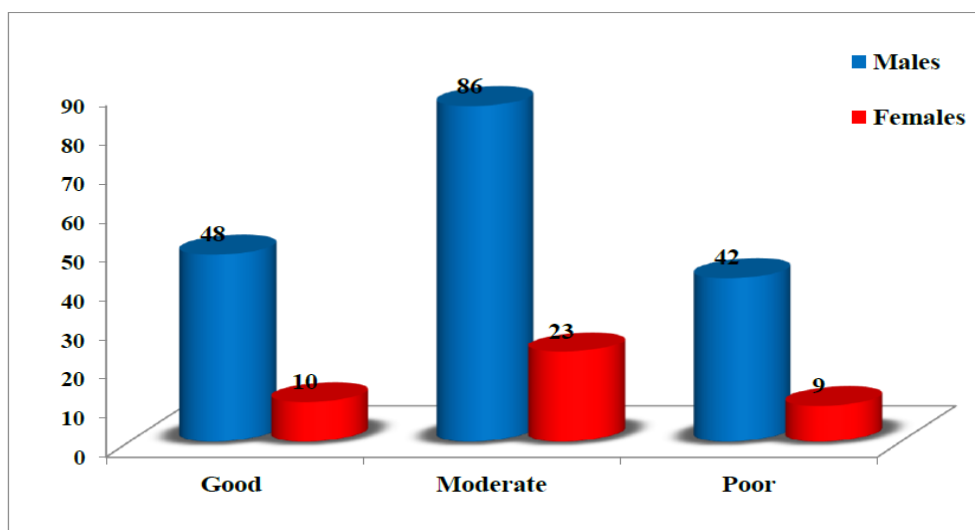


**Figure No. 13: Multiple bar diagram represents cadre wise comparison of knowledge of hypertension.**

DESCRIPTION: Study reveals that there was statistical significance difference of cadre wise distribution of participants according to their knowledge ( $P < 0.05$ ). Managers and officers had better knowledge as compare to other staff members.

**Table No. 12: Table depicting gender wise comparison of knowledge of hypertension.**

| Gender                | No. of participants              | Knowledge scores |          |      |
|-----------------------|----------------------------------|------------------|----------|------|
|                       |                                  | Good             | Moderate | Poor |
| Males                 | 176                              | 48               | 86       | 42   |
| Females               | 42                               | 10               | 23       | 9    |
| Total                 | 218                              | 58               | 109      | 51   |
| $X^2$ - test, P-Value | $X^2 = 2.961$ , $P = 0.517$ , NS |                  |          |      |

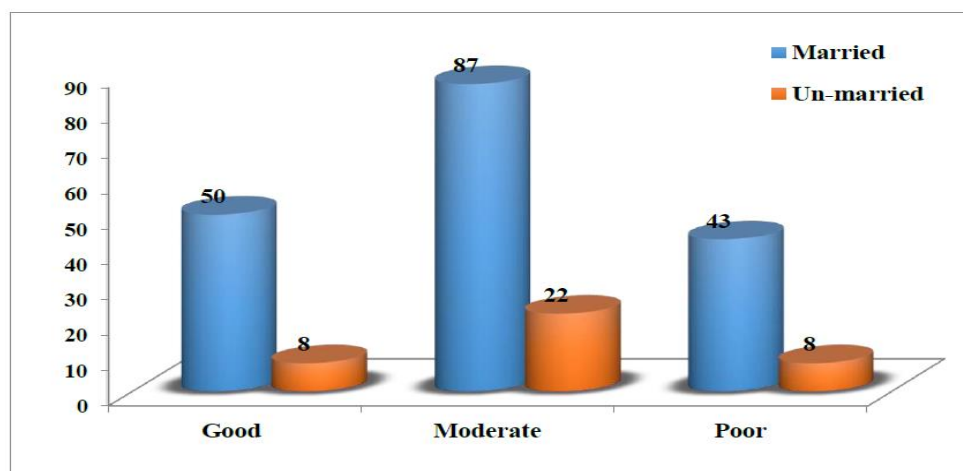


**Figure No. 14:** Multiple bar diagram represents gender wise comparison of knowledge of hypertension.

DESCRIPTION: Study reveals that there was no statistical significance difference of gender distribution of participants according to knowledge ( $P > 0.05$ ).

**Table No. 13:** Table depicting marital status wise comparison of knowledge of hypertension.

| Marital status           | No. of participants                 | Knowledge scores |          |      |
|--------------------------|-------------------------------------|------------------|----------|------|
|                          |                                     | Good             | Moderate | Poor |
| Married                  | 180                                 | 50               | 87       | 43   |
| Un-married               | 38                                  | 8                | 22       | 8    |
| Total                    | 218                                 | 58               | 109      | 51   |
| $\chi^2$ - test, P-Value | $\chi^2 = 3.187$ , $P = 0.397$ , NS |                  |          |      |



**Figure No. 15:** Multiple bar diagram represents marital status wise comparison of knowledge of hypertension.

DESCRIPTION: Study reveals that there was no statistical significance difference of marital status wise distribution of participants according to their knowledge ( $P>0.05$ ).

**Data Analysis:** Data was analyzed by IBM SPSS 25.0 version software. Collected data were spread on excel sheet and prepared master chart. Through the master chart tables and graphs were constructed. For quantitative data analysis ANOVA and t-test and coefficient of correlation tests were applied and for qualitative data analysis chi-square test was applied for testing of statistical significance. If P-value was less than 0.05 considered as significant.

## RESULT

A total of 35 banks which had 266 bank employees working in them were surveyed. Of these, 218 which included 43 managers/assistant managers, 72 officers, 81 clerks and 22 sub staff participated in the study. In the age group of 51-60 years (9.63%), in 41-50 years of age group (38.07%) followed by 31-40 years (20.18%) and 21-30 years (28.44%), male(80.73%), married (82.5%), clerk (37.2%) from middle class (37.61%).

**Table No. 14: Table depicting prevalence of hypertension according to demographic information.**

| Variable                     | No of Employee | No of patients with hypertension (%) | P value |
|------------------------------|----------------|--------------------------------------|---------|
| <b>Age(year)</b>             |                |                                      |         |
| 21-30                        | 62(28.44%)     | 7(11.29%)                            | 0.08    |
| 31-40                        | 83(38.07%)     | 16(19.27%)                           |         |
| 41-50                        | 44(20.18%)     | 23(52.27%)                           |         |
| 51-60                        | 21(9.63%)      | 16(76.19%)                           |         |
| <b>Gender</b>                |                |                                      |         |
| Male                         | 176(80.73%)    | 59(33.52%)                           | 0.08    |
| Female                       | 42(19.26%)     | 3(7.14%)                             |         |
| <b>Marital Status</b>        |                |                                      |         |
| Married                      | 180(82.5%)     | 60(33.33%)                           | ---     |
| Unmarried                    | 38(17.5%)      | 2(5.26%)                             |         |
| <b>Cadre</b>                 |                |                                      |         |
| Manager                      | 43(19.7%)      | 24(55.81%)                           | ---     |
| Officer                      | 72(33.0%)      | 26(36.11%)                           |         |
| Clerk                        | 81(37.2%)      | 10(0.12%)                            |         |
| Sub Staff                    | 22(10.1%)      | 2(9.09)                              |         |
| <b>Socio-economic Status</b> |                |                                      |         |
| Upper Class                  | 44(20.18%)     | 30(68.2%)                            | 0.007   |
| Upper Middle Class           | 71(32.56%)     | 15(21.12%)                           |         |
| Middle Class                 | 82(37.61%)     | 15(18.29%)                           |         |
| Lower Middle Class           | 21(9.63%)      | 2(9.52)                              |         |

Of the total 218 participants, the prevalence rate of hypertension of Bank employees is 53.2%. Incidence of pre-hypertension is 24.3%. Among 62 (28.44%) of hypertension participants, 53 (46.1%) of participants had pre-hypertension, 36 (31.3%) of participants had stage 1 hypertension and 26 (22.6%) of participants had stage 2 hypertension. Only 1 (0.5%) of participant had seen hypotension.

In the study maximum number 91 (41.7%) of participants were observed the pulse rate in the range of 81-90, followed by 55 (25.2%) participants pulse rate in the range of 71-80 and 52 (23.9%) participants pulse rate was in the range of 91-100. In the study maximum number 115 (52.7%) of participants were overweight (BMI was 25.0--29.9), followed by 64 (29.4%) of participants were normal range of BMI, 31 (14.2%) participants were obese and 7 (3.2%) of participants were extreme obese.

**Table No. 15: Table depicting Prevalence of HTN according to the studied risk factors (n=218).**

| Variable                            | No of Employee | No of patients with hypertension (%) | P value |
|-------------------------------------|----------------|--------------------------------------|---------|
| <b>BMI(kg/m<sup>2</sup>)</b>        |                |                                      |         |
| <25                                 | 64(29.4%)      | 3(4.68%)                             | 0.00    |
| 25-30                               | 115(52.17%)    | 27(23.47%)                           |         |
| 30-35                               | 31(14.2%)      | 25(80.64%)                           |         |
| >35                                 | 7(3.2%)        | 7(100%)                              |         |
| <b>Pulse rate</b>                   |                |                                      |         |
| <70                                 | 11(5.0%)       | 0(0.0%)                              | 0.00    |
| 70-100                              | 198(90.82%)    | 53(26.76%)                           |         |
| >100                                | 9(4.1%)        | 9(100%)                              |         |
| <b>Health Behaviour</b>             |                |                                      |         |
| Smoking                             | 60(27.52%)     | 30(50.0%)                            | ---     |
| Smokeless tobacco use               | 42(19.0%)      | 20(47.61%)                           |         |
| Alcohol intake                      | 87(40.0%)      | 40(45.97%)                           |         |
| Adding extra salt while eating food | 51(23.4%)      | 41(80.39%)                           |         |
| Eating fast food                    | 157(72.0%)     | 89(56.68%)                           |         |
| <b>Physical Activity</b>            |                |                                      |         |
| Sedentary life style                | 146(66.97%)    | 46(31.5%)                            | ---     |
| High Stress level                   | 61(28%)        | 26(42.62%)                           |         |
| Nil Exercise or fitness             | 146(67%)       | 46(31.5%)                            |         |
| <b>Sitting Hours (per day)</b>      |                |                                      |         |
| 06 hrs.                             | 6(2.75%)       | 2(33.33%)                            | ---     |
| 08 hrs.                             | 131(60%)       | 36(60%)                              |         |
| 10 hrs.                             | 68(31%)        | 18(26.47)                            |         |
| 12 hrs.                             | 13(6%)         | 6(46.15%)                            |         |

The prevalence rates of the risk factor of hypertension were as follows: Smoking 27.5%, Tobacco Chewing 19%, alcohol consumption 40%, sedentary life-style 66%. Dietary habits such as adding extra salt while eating food (23.4 %), eating vegetables (99.9%), eating fast food (72%), eating fruits (92.4%). Nil was common among hypertensive subjects (67%), while very high stress level (28%) was noted among hypertensive subjects. among 218 employees where 2.75% of participants usually sitting 06hr in a day, as follows 60% of 08hr, 31% of 10hr and 6% of 12hr.

## DISCUSSION

Present study is carried out to find out the screening for risk of hypertension among the bank employees of Kalaburagi city in which a little over 40% of the participants were in the age group of 31-40 years. Majority of the participants were males, married & from Upper middle-class family. Employees working on contract bases and pregnant female employees are excluded from our study and most of the participants were clerk. Important work-related factors such as economic market globalization, automation, outsourcing, job insecurity, long working hours, usage of computer screen for prolonged periods of time, increasing competition and multifunctional task are significantly reshaping bank employees' lives professionally as well as personally.

**Ismail IM et al.**, Studies among 117 bank employees including 18 managers/assistant managers, 33 officers and 66 clerks participated in the study. The prevalence of hypertension was 39.3%. Increasing age, family history of hypertension, body mass index  $\geq 25$  kg/m<sup>2</sup> and abnormal waist-hip ratio were significantly more frequent among the hypertensive than normotensive population.<sup>[3]</sup> Also, in **Chataut J et al.**, study among 416 bank employees of Kathmandu district, prevalence of hypertension was found to be 11.3%. Of the 47 participants with hypertension, 40(85.1%) were known cases while 7(14.9%) were newly diagnosed. Age, gender, marital status, overweight (BMI  $\geq 25$ ), smoking, alcohol consumption, having diabetes, and family history of -hypertension were found to have significant association with hypertension in univariate analysis. The multivariate logistic regression analysis revealed that gender, having diabetes and physical activity had independent and significant association with hypertension.<sup>[4]</sup> In a study by **Kulkarni p p et al.**, among 270 bank employees of Latur city, prevalence of hypertension was found to be 32.97%. Of the 122 participants with hypertension. Age, gender, marital status, overweight (BMI  $\geq 25$ ), smoking, alcohol consumption, having diabetes, and family history of -hypertension were found to have significant association

between the categorical variables was analyzed by using chi-square test.<sup>9</sup> Also **Kumar S G et al.**, studied 192 (128 male and 64 female) bank employees from urban Puducherry, India and mean $\pm$  SD age of the participants was 39.5 $\pm$ 10.6 years. The prevalence of hypertension and pre-hypertension was 44.3% (95% CI: 37.2%–51.3%) and 41.1% (95% CI: 34.1%–48.1%), respectively. Of 85 participants with hypertension, 47 (55%) was known case and 38 (45%) were newly diagnosed. Multiple logistic regression analysis revealed that living in the 4<sup>th</sup> (OR: 3.13) or 6<sup>th</sup> (OR: 3.11) decade of life, consumption of extra salt (OR: 2.49), and physical activity  $\geq 2$  hours per day (OR: 0.21) were associated with hypertension among bank employees. There is a need for strengthening adoption of certain interventional measures in lifestyle such as reducing salt intake, weight reduction and promoting physical activity among this vulnerable group should be encouraged. Once identified, elevated BP should be monitored at regular intervals because it is a lifelong disease.<sup>[18]</sup>

## CONCLUSION

Based on the findings from the current study we can conclude that hypertension is significantly associated with Age > 40 years, male, gender, cadre of employment, BMI > 25 kg/m<sup>2</sup> smoking, smokeless tobacco use, alcohol use and less physical activity. We also found that 24.3% of the participants were classified as pre-hypertensive, which adds to the overall future risk of developing hypertension. Measures for early detection of hypertension required and health education regarding lifestyle modifications is recommended in reducing and controlling the prevalence of hypertension.

## RECOMMENDATION

- Regular blood monitoring should have to be maintain.
- Sedentary life style needs to be avoid among bank workers.
- Regular physical exercise needs to be conducted by all bank workers on daily based.
- Close monitoring of BMI and maintaining to normal value should have to be maintain.
- Alcohol consumption reduction mechanism need to maintain through BCC.
- Biological parent encouragement for close monitoring of their blood pressure by the bank worker should be encouraged as HPN is a known family associated disease

## FUTURE OUTLOOK

The study should be conducted in a large, regularly arranging of NCDs camps for bank employees can be conducted for the early detection of the condition as their life style is a risk

factor for the HTN. Personally, the bank employees should be encouraging for the regular health checkup. This study population should be motivated for maintaining healthy life style.

### LIMITATIONS

1. We think the study can be carried out in large population.
2. We think that the participant's not gave the correct responses because of their busy schedule.
3. We think that the sample is size is less as compared to the other studies, we got few participant's in each branches of Kalaburagi city.
4. Few banks' branches not permitted us to carry out the study because they were concerned about their, privacy, busy schedule.

### RMES's COLLEGE OF PHARMACY

### DEPARTMENT OF PHARMACY PRACTICE

### PHARM D

### Screening For Risk of Hypertension among the Bank Employees

|                                                                                |                                                                                                                         |
|--------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| DATA COLLECTION FORM                                                           |                                                                                                                         |
| <b>Demographic Information</b>                                                 |                                                                                                                         |
| <b>Sex &amp; Age:</b>                                                          | (Male/Female) & (                                                                                                       |
| <b>Marital Status:</b>                                                         | <input type="radio"/> Married <input type="radio"/> Unmarried <input type="radio"/> Divorced                            |
| <b>Cadre of employment</b>                                                     | <input type="radio"/> Manager <input type="radio"/> Officer <input type="radio"/> Clerk <input type="radio"/> Sub Staff |
| <b>For Women / Are You Pregnant?</b>                                           | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>Blood Pressure: Reading 01</b>                                              | Weight In kg: Height                                                                                                    |
| <b>Reading 02 Pulse Rate:</b>                                                  | In cm: BMI:                                                                                                             |
| Behavioural Measurement                                                        |                                                                                                                         |
| <b>1) Do You Smoke Any Tobacco Product, Such As Cigarette, Pipes or Other?</b> | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>2) Do You Chewing Any Tobacco Product?</b>                                  | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>3) Do You Intake Alcohol?</b>                                               | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>4) Which Types of beverages you consume?</b>                                | <input type="radio"/> Tea <input type="radio"/> Coffee <input type="radio"/> Other <input type="radio"/> Non            |
| Nutrition Diet                                                                 |                                                                                                                         |
| <b>5) Are You.....?</b>                                                        | <input type="radio"/> Veg <input type="radio"/> Non Veg <input type="radio"/> Mixed                                     |
| <b>6) Are You Eating Fruits?</b>                                               | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>7) Are you eating vegetables?</b>                                           | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| DATA COLLECTION FORM                                                           |                                                                                                                         |
| <b>8) Do you prefer Extra Salt or Eating food with High salt content?</b>      | <input type="radio"/> Yes <input type="radio"/> No                                                                      |
| <b>9) Do You Use Butter or Ghee?</b>                                           | <input type="radio"/> Yes <input type="radio"/> No                                                                      |



|                                                                                                              |                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>10) Are you using Vegetable Oil For Cooking?</b>                                                          | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| <b>11) Do You Eat Fast-Food?</b>                                                                             | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| <b>12) Are You Aware Of Disease that Will Effect You from consumption of fast-food?</b>                      | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| Physical Activity                                                                                            |                                                                                                                                                               |
| <b>13) How much time do you usually spend sitting or reclining in a day?</b>                                 | <input type="radio"/> 06 hrs <input type="radio"/> 08 hrs <input type="radio"/> 10 hrs <input type="radio"/> 12 hrs                                           |
| <b>14) Mode of Travel.</b>                                                                                   | <input type="radio"/> Walk <input type="radio"/> Two Wheeler <input type="radio"/> Public Transport <input type="radio"/> Car                                 |
| <b>15) Do you spend your time in any sports, Fitness and Exercise?</b>                                       | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| <b>16) How many hours do you work in a day?</b>                                                              | <input type="radio"/> 06 hrs <input type="radio"/> 08 hrs <input type="radio"/> 10 hrs <input type="radio"/> 12 hrs                                           |
| <b>17) Did you frequently bring Office Work to home to do at night?</b>                                      | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| <b>18) Did you feel fatigued or tired even when you wake after an adequate sleep?</b>                        | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |
| <b>19) Have you ever had blood Pressure Measured by a doctor or other health worker/Under BP Medication?</b> | <input type="radio"/> Yes <input type="radio"/> No<br><input type="radio"/> Already BP <input type="radio"/> Not Aware<br><input type="radio"/> Patient On Rx |
| <b>20) Have you aware sedentary life leads to cardiovascular diseases?</b>                                   | <input type="radio"/> Yes <input type="radio"/> No                                                                                                            |

Ref: [www.who.int/chp/steps](http://www.who.int/chp/steps)

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