IJASR International Journal of Academic and Scientific Research
ISSN: 2272-6446 Volume 2, Issue 4 (November-December 2014), PP 78-85
www.ijasrjournal.org

Prevalence of hypertension among working personnel at Taibah College of Medicine, Medina, Saudi Arabia, 2013

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ABSTRACT:

Background

Hypertension is a major public health problem worldwide and is one of the risk factors for vascular diseases. No available data about its prevalence among working personnel at Taibah University.

Objectives

The study aimed to estimate the prevalence of hypertension among working personnel of Taibah medical college and to identify the risk factors that associated with its occurrence.

Methods

A cross-sectional study was conducted in the male section of working personnel at college of medicine, Taibah University, Medina, Saudi Arabia. The data were collected from randomly selected 50 male by self- administrated questionnaires, representing around 50% of total working personnel. The data collected included the main risk factors of hypertension. The statistical analysis was conducted by SPSS and Excel programs.

Results

The prevalence of hypertension among the studied working personnel was 26% (13 out of 50 subjects). The doctor's population showed significantly higher prevalence of hypertension of 20% (10 persons). We observed that 14% of total sample were hypertensive and above 50 years. Among the 13 hypertensive patients, 8 were obese, 4 were overweight, and only one was normal weight. Unlike expected, out of the 13 (hypertensive patients, 9 (18%) were non-smoker, 3 (6%) were ex-smoker, and only one was smoker. Of the 13 hypertensive patients, 77% of them reported that they have had positive family history of hypertension.

Conclusion

The prevalence of hypertension among the studied working personnel was relatively high. The main risk factors were age over 50 years, overweight or obesity, and positive family history of hypertension.

Keywords: *Hypertension, Prevalence, Saudi Arabia, Taibah University, Working personnel.*

I. INTRODUCTION

Hypertension (HTN) or high blood pressure is a cardiac chronic medical condition in which the systemic arterial blood pressure is elevated, that means the heart has to work harder than it should to pump the blood around the body. Blood pressure is usually classified based on the systolic and diastolic blood pressure. Systolic blood pressure is the blood pressure in vessels during a heartbeat while diastolic blood pressure is the pressure between heartbeats [1].

Hypertension is one of the most important preventable causes of premature morbidity and mortality . It is a major risk factor for ischemic and hemorrhagic stroke, myocardial infarction, heart failure, chronic kidney disease, cognitive decline and premature death. Untreated hypertension is usually associated with a progressive rise in blood pressure. The vascular and renal damage that this may cause can culminate in a treatment-resistant state [2].

Hypertension is classified as primary or secondary. These two classifications refer to the underlying cause. Primary or "essential" hypertension has no known cause, however genetic and certain lifestyle factors such as body weight and salt intake are involved. Ninety five percent of persons diagnosed with hypertension fall into this category. The diagnosis is made when no other cause is found. Secondary hypertension is caused by some other medical diagnosis or problem, such as kidney disease, Cushing's syndrome, pregnancy, oral contraceptive use, chronic alcohol abuse or the use of certain medication [3].

Most people with hypertension have no signs or symptoms. Although a few people with early-stage high blood pressure may have dull headaches, dizziness or a few more nosebleeds than normal, these signs and symptoms typically don't occur until high blood pressure has reached a severe even life-threatening stage. Because there are no symptoms, people can develop heart disease and kidney problems without knowing they have hypertension [4].Worldwide, nearly one billion people have high blood pressure; of these, two-thirds are in developing countries. In USA, the prevalence of HTN in 2008 was 18.2% in men and 17.8 in women, but it was more common in China reaching 29.0% in men and 25.5% in women, in Russia it was 37.5% in men and 28.1% in women and in Japan it was 30.5% for men and 23.2% in women [5].

In the Eastern Mediterranean region, the prevalence of hypertension averages 29% and it affects approximately 125 million individuals .Of greater concern is that cardiovascular complications of high blood pressure are on the increase, including the incidence of stroke, end-stage renal disease and heart failure. In many of these countries, the control rates for high blood pressure have actually slowed in the last few years. In 2008, the prevalence of HTN was 26.0% among Saudi men and 21.5% among Saudi women, in Egypt it was 24.5% in men and 24.7% in woman, in Jordan it was 21.1% in men and 16.5% in women and in UAE it was 21.1% in men and 13.3% in women [5].

II. SUBJECTS AND METHODS

A cross-sectional study was conducted in the male section of working personnel of faculty of medicine in Taibah University, Al-Medina, Saudi Arabia in 2013. The Subjects were male working personnel of the faculty of medicine including doctors, employs, and other workers. The data were collected from randomly sample consisted of 50 male (29 doctors, 18 employs, and 3 workers) by self- administrated questionnaires, representing around 50% of total working personnel at the studied faculty. The data collected included the main risk factors of hypertension (age, BMI, exercise, smoking, stress, and family history).

III. DATA ANALYSIS

The statistical analysis was conducted by using SPSS and Microsoft Office EXCEL programs. Descriptive and analytical statistics were performed. P value was considered significant at level < 0.05.

IV. RESULTS

The prevalence of hypertension among working personnel was 26% (13 out of the studied 50 persons). The mean age of all studied subjects was 41.1 ± 9.1 (25-61 years). We observed that 14% of total sample were hypertensive and above 50 years. Figure 1 showed that 10 doctors, 2 employees, and one worker were hypertensive. Figure 2 showed that out of 50 persons, there was 26 (52%) persons are less than 40 years, 12 (24%) persons are between 40-50 years, and 12 (24%) persons are above 50 years. Figure 3-A showed that 42% of total workers were obese (BMI ≥ 30), 34% were overweight (BMI 25-29.99), and 24% were normal weight (BMI 18.5-24.99). Among the 13 (26%) hypertensive patients, 8 were obese, 4 were overweight, and only one was normal weight. Figure 4 showed that 58% of total subjects did not exercise daily. And 42% exercise between 30 minutes to two hours daily. About 16% were hypertensive and physically inactive.Figure 5 showed that 68% were non-smoker, 22% were smoker, and 10% were ex-smoker. Unlike expected, of 13 (26%) hypertensive patients, 9 (18%) were non-smoker, 3 (6%) were ex-smoker, and only one was smoker.

There were 34 (68%) subjects with positive family history of hypertension and there were 16 (32%) subjects without family history. Of 13 hypertensive patients, there were 10 (77%) hypertensive with positive family history of hypertension and there were 3 (23%) hypertensive without family history, as shown in Figure 6.

V. DISCUSSION

This cross-sectional study was conducted in the male section of working personnel faculty of medicine in Taibah University. The prevalence of hypertension was 26%, and this result is similar to what we found in the epidemiological studies of WHO in 2008 [14]. These studies estimated the prevalence of hypertension in Saudi Arabia to range from19.2% – 29.9%. The doctors in this study showed higher prevalence of hypertension, which was 20% (10 out of 50 persons).

The risk of hypertension increases with age and shows high levels in the group above 50 years. The association between age and hypertension shows P value was 0.009. Of the 13 hypertensive patients, 12 subjects were either obese or overweight and only one was normal weight. The association between hypertension and obesity is considered to be not quite statistically significant, because P value was 0.058.

In this study, subjects reported daily exercise showed less prevalence of hypertension (10%) compared to physically inactive group (16%). Exercise duration in first group is from half hour to two hours daily, and most of them exercising less than 40 minutes daily. Short exercising duration could be the reason to show a not statistically significant association between hypertension and exercise.

Only one hypertensive subject was smoker and this contradicts with other studies, which showed high frequency of hypertension in smokers. Young age of smokers and short smoking duration are probably reasons to get this result. Ex-smokers usually have longer smoking duration and more than half of them (60%) are hypertensive. About 77% (10) of hypertensive patients have positive family history of hypertension. But association is not considered to be statistically significant.

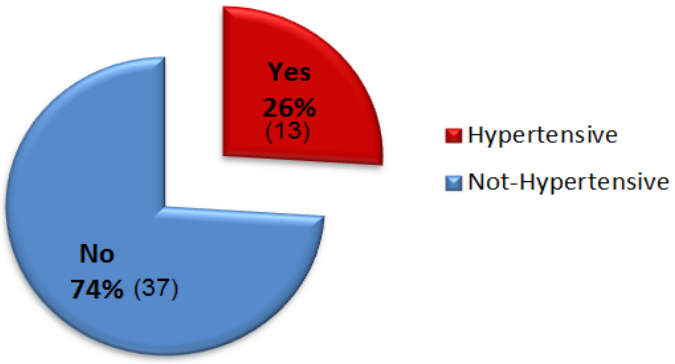

Figure1. Prevalence of hypertension among working personnel, Faculty of Medicine, Taibah University

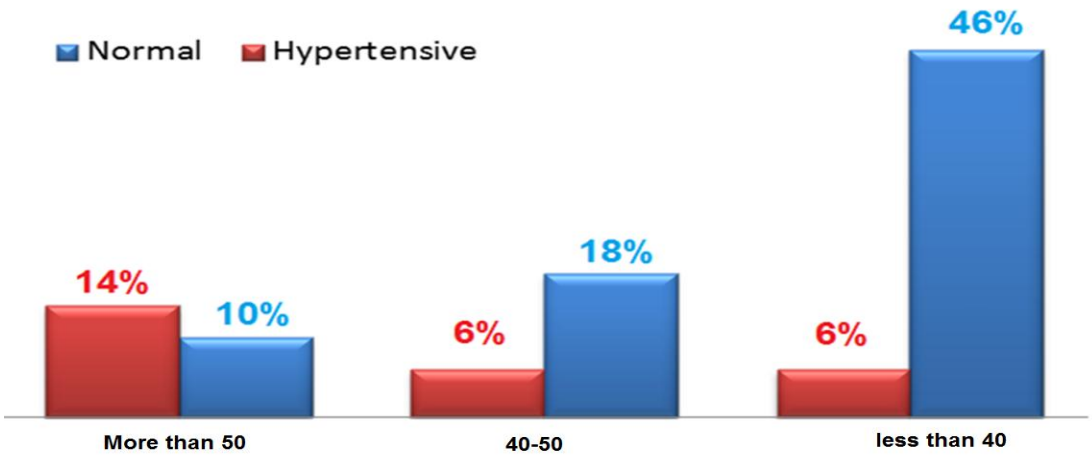

Figure2. Association between Hypertension and Age (in 50 working personnel)

X^2= 9.35	**P Value = 0.009312274**	**df= 2**

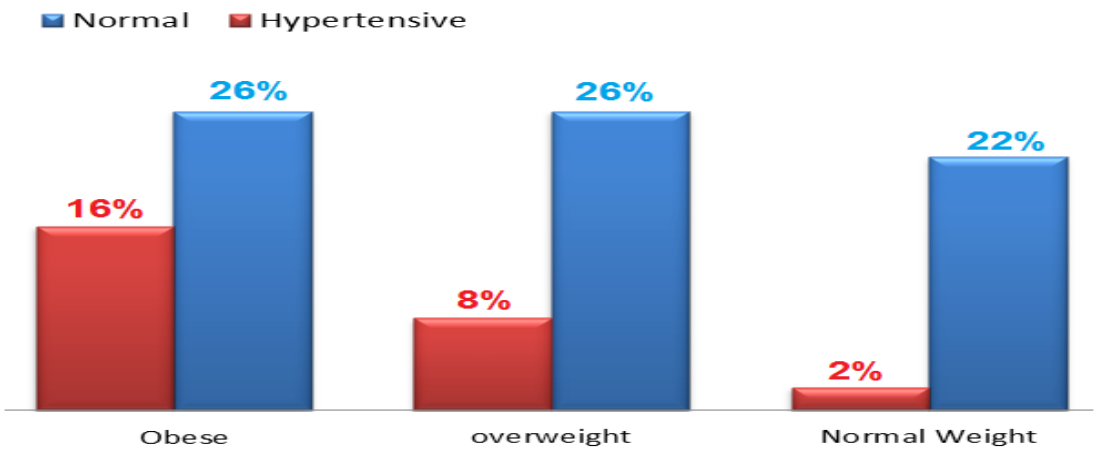

Figure3-A. Association between Hypertension and Obesity(in 50 working personnel)

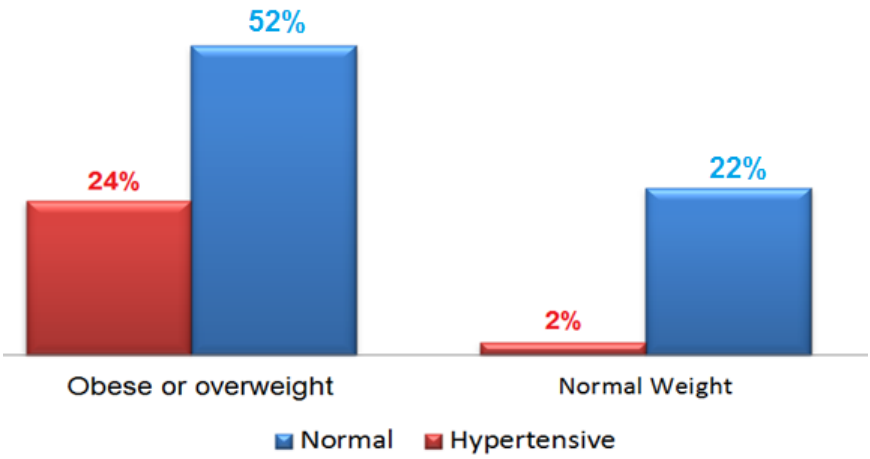

Figure3-B. Association between Hypertension and Obesity(in 50 working personnel)

X^2= 3.59	**P Value = 0.057998849**	**df= 1**

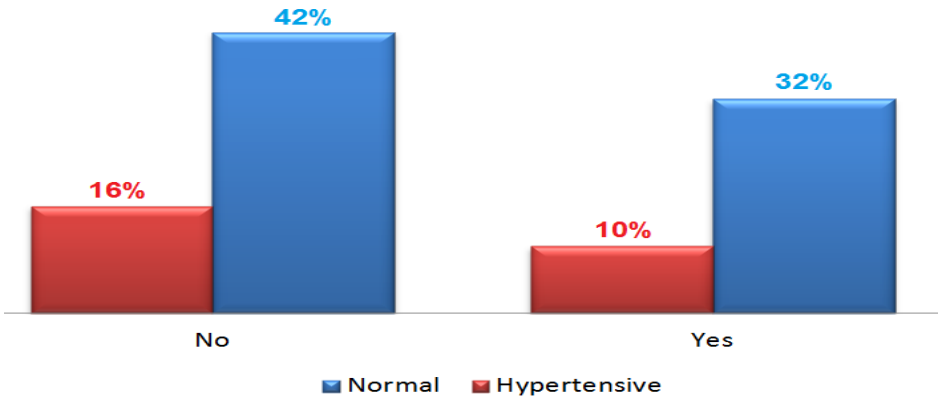

Figure 4. Association between Hypertension and Exercise(in 50 working personnel)

X^2= 0.090	**P Value = 0.3819**	**df= 1**

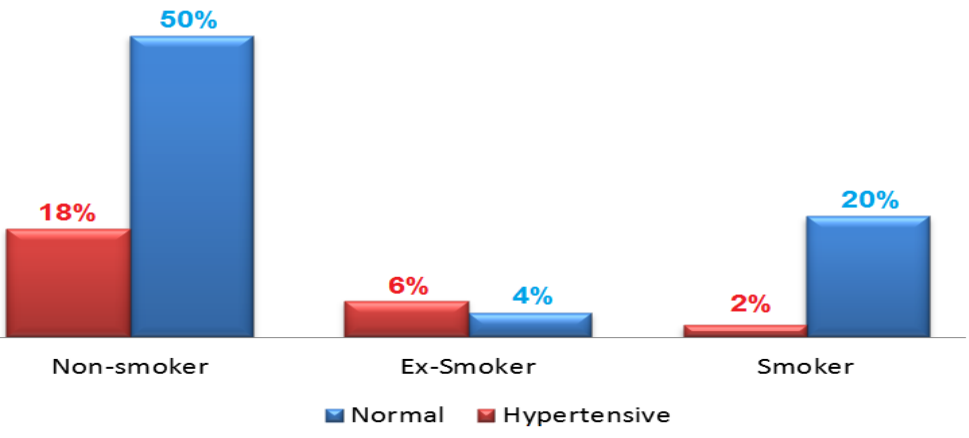

Figure5. Association between Hypertension and Smoking(in 50 working personnel)

X^2= 4.64	**P Value = 0.098139335**	**df= 2**

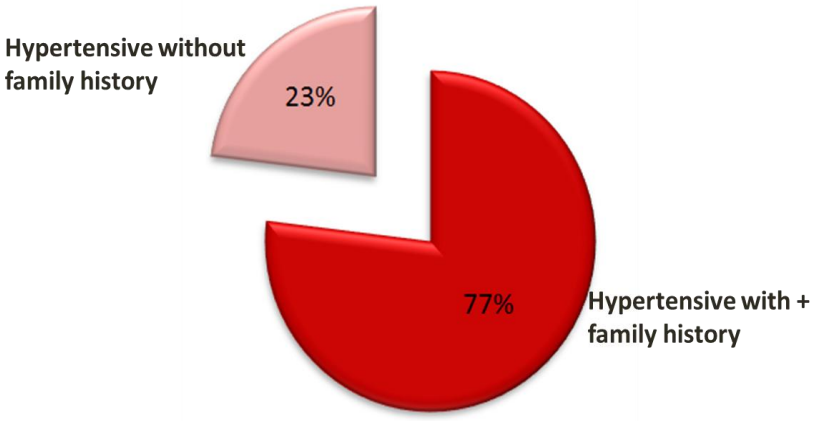

Figure6. Association between Hypertension and Family history (in 26 hypertensive patients)

X^2= 0.208	**P Value = 0.3241**	**df= 1**

VI. CONCLUSION

The prevalence of hypertension was relatively high (26%) among the studied working personnel at Taibah College of medicine. The main associated risk factors were age over 50 years, overweight or obesity, and family history. Further studied are needed to instigate the association between hypertension and smoking, and why hypertension is more in non-smokers among the studied working personnel.

VII. Authors' contributions

All the authors were participated in constructed, distributed and collected the questionnaires, analyzed the data and drafted the paper.

7.1 Conflict of interest

The authors have no conflict of interest to declare.

7.2 **Acknowledgements**

We would like to thank all subjects participated in this study. We would also like to thank Dr. Khaled Kasim, Associate Professor of Family and Community Medicine, Taibah College of medicine, for his time and help in guideless and reviewing the findings.

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