

## A Study to Know the Prevalence and Awareness of Hypertension in Market Population of Ras Al Khaimah, UAE

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### ABSTRACT

**Background:** Hypertension is an important public health challenge in both economically developing and a developed country is a commonest non-communicable disease and a global epidemic. The global prevalence of hypertension has been increasing.

**Method:** In a cross-sectional prospective study on unselected population of market workers were screened for hypertension and its risk factors by anthropometric measurements and a structured questionnaire for demographic and awareness (Knowledge and attitude) of these subjects regarding hypertension. Hypertension was defined as BP  $\geq$  140 and/or  $\geq$  90 mmHg or being on drug therapy.

**Results:** Fifty percent of the screened populations were hypertensive. Of this number, 35% were not aware of their condition and diagnosed on screening. 44% had high BMI.

**Conclusion:** The prevalence of hypertension in market workers in this study was 50%, and the majority of them were unaware of their disease.

**KEY WORDS:** Hypertension, Prevalence, Awareness, Body mass index, Blood pressure.

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### INTRODUCTION

Hypertension is an important public health challenge in both economically developing and a developed country is a commonest non-communicable disease and a global epidemic [7,8]. The global prevalence of hypertension has been increasing. In 2000, 972 million people had hypertension with a prevalence rate of 26.4%. These are projected to increase to 1.54 billion affected individuals and a prevalence rate of 29.2% in 2025 [8]. Most of the deaths in the Middle East can be attributed to chronic, noncommunicable diseases such as cardiovascular disease, diabetes, and high blood pressure - all these diseases are associated with obesity as the citizens have adopted lifestyles of physical inactivity and overconsumption of high salt and energy-dense foods.

Uncontrolled hypertension is the most common cause for the end-organ damage including heart diseases, stroke, blindness, and renal disease [1,9,12]. These serious complications of hypertension can be prevented by adequate blood pressure control [2,11].

The basis of the study was that, we expected the people working in market areas lead an sedentary lifestyle with lack of regular exercise and that they would consume fast food high in salt content for most of their meals, oils used for these meals contain trans fatty acids which damage the lining of the arteries. This damage leads to hardening of the arteries and higher blood pressure. Our theory to think so was formulated thinking that these people are economically challenged and are supporting their families back home as the sole bread winners. This would make them not to pay any attention to their health and due to lack of time they would not be able to do any exercise. Also to save money on expenses they would consume cheap roadside food or fast food that is cheap and tasty but unhealthy on the long run. Based on all these factors we studied the prevalence and awareness of hypertension and its risk factors for cardiovascular disease in a market population.

### MATERIALS AND METHODS

In this cross-sectional prospective study on unselected population of market workers were screened for hypertension, and its risk factors by anthropometric measurements and a structured questionnaire for demographic and awareness (Knowledge and attitude) of these subjects regarding hypertension.

After the approval from the ethical committee of RAKMHSU and taking the written consent of these subject, the survey was carried out in "kerela market" in the city of Ras Al Khaimah in the United Arab Emirates on 74 random subjects for three days.

\* The following were the steps carried out:

**Step 1:** Measurement of blood pressure by sphygmomanometer and pulse for three consecutive days using the same instrument.

**Step 2:** Anthropometric data collection (includes Body mass index ( BMI ), Waist-hip ratio, and, waist- height ratio) by Weighing scale and inch tape.

**Step 3:** The questionnaire addressed personal information, biodata, habits and practices that affect hypertension and educational status [ includes gender, age, nationality, occupation, education, employment status, marital status, diet, fast food, smoking, drinking, awareness, diabetes, exercise].

**Step 4:** Counselling the people and education on healthy lifestyle modifications.

The study groups were considered as hypertensive and non-hypertensive based on the criteria by the WHO/ISH guidelines: (WHO 2011 guidelines)[3,6,14]

Optimal/Normal SBP 120 DBP 80 mmHg

Hypertension –SBP BP  $\geq$  140 DBP90  $\geq$  mmHg

#### **High BP-**

Stage 1: SBP 140-159; DBP90-99

Stage 2: SBP>160 DBP>100

The body mass index was taken into consideration based on the following classification of BMI [13]:

Underweight: from 16.0 to 18.5

Normal: from 18.5 to 25

Overweight: from 25 to 30

Obese Class I: from 30 to 35

Obese Class II: from 35 to 40

Obese Class III: over 40

**Statistical Analysis:** The data was analysed using the Microsoft excel and data was expressed in the percentage.

## **RESULTS**

In our study we found 50% were found to be hypertensive and 50% normotensive. The main occupation of the workers in our sample included Shop owners, Sales men, technicians, cooks, and tailors

Of the total 50% hypertensive people, 35% were found to be hypertensive upon screening and 7% were controlling their hypertension with anti-hypertensive medications and lifestyle modifications whereas 8% were uncontrolled though they knew about their condition as shown in the [figure 1].

Proportion of hypertension in the study population: 20.27 % were normotensive and 29.73% were hypertensive (139/89). Also 6.75% had controlled hypertension.

We counselled these individuals on the hazards of hypertension and explained to them how with simple lifestyle modifications (like decreasing the consumption of salty and oily food and observing some form of physical activity) their risk factors to dangerous complications like renal failure and CAD can be avoided. 32.43% were at stage 1 of hypertension (140/90 – 159/99), and 10.8% were at stage 2 (BP > 160/100 ) as shown in the [figure 2].

Body mass index, 17 people were overweight (at risk group ), 6 were Obese class 1, and , 1 individual was Obese class 2 as shown in the [figure 3].

Those with a waist to height ratio (WHtR) of more than 0.5 are considered as the high risk category. 26 individuals of the age under 40 had a WHtR > 0.5 (at risk group) as shown in the [figure 3].

When it came to the **awareness of** these people on hypertension, we found that 49% of the population were unaware of either hypertension as a whole or were acquainted with the term but knew nothing else apart from the definition as shown in the [figure 4].

When asked about their education levels of those who were unaware , 13% said they had attained a primary education till middle school, 17 % said they were educated till secondary school, and 7% claimed they were recipients of some form of professional degree and the rest received no formal education (63%) as shown in the [figure 5].

We found that 72 % of those who were hypertensive in our screening were unaware that they suffered from hypertension as shown in the [figure 6].

About awareness of comorbidities of hypertension and risk factors : 26% were aware that smoking causes hypertension, 35% knew the value of BP, 27% knew that high salt intake can cause an increased BP, 30% knew that obese people are more prone to develop hypertension, and 31% knew about CVD if not the definition at least the principle as shown in the [figure 7].

Figure: 1: Showing proportion of hypertension subjects in the study

Showing proportion of hypertension subjects in the study

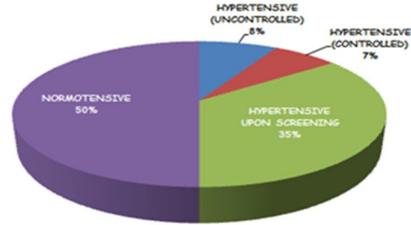
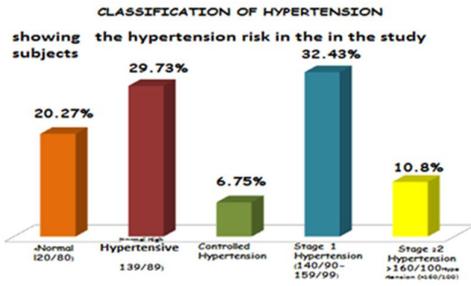


Figure -2 showing the hypertension risk in the in the study subjects

Figure-3 showing body mass index patterns in the study subjects



No. of persons overweight (WHtR)

showing body mass index patterns in the study subjects



No. of people BMI

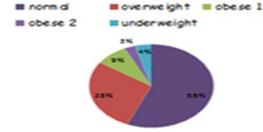


Figure-4 Awareness of hypertension among overall study subjects

Figure: 5 Awareness based on educational status.

Awareness of hypertension among overall study subjects

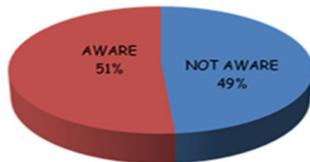


Figure: 5 Awareness based on educational status.

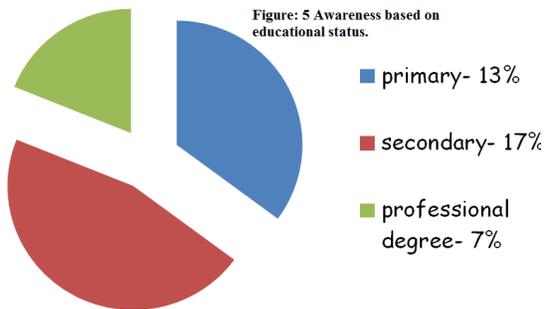
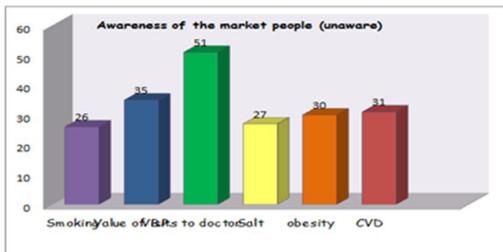


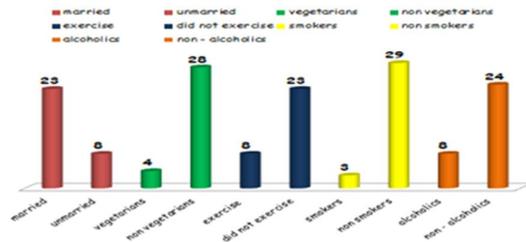
Figure: 6 Awareness of knowledge on hypertension

Figure: 7 Demographic variability's in overall study group

Awareness of knowledge on hypertension



Demographic variability's in overall study group



## DISCUSSION

Many studies have shown that hypertension is on raise in many developing and developed countries mainly attributed to life style changes. The present study was conducted mainly on expatriate residing in UAE also found to have high risk for hypertension due to modified life style. The high prevalence of undiagnosed hypertension is emphasized by the large number of cases discovered incidentally e.g. during surveys, or when patients are undergoing treatment for other diseases, especially in developing countries. [5,15]

Our study also showed 35% out of 50% hypertensive were not aware of their condition and diagnosed on screening.

The low level of awareness of hypertension is a global phenomenon [4, 10] , our study also found nearly 50% of the subjects were unaware about hypertension and its complications.

The study also showed low levels of awareness with respective to education status.

Obesity, lack of exercise will clearly have a negative impact on the population's health status.

This is slightly confusing as we would normally expect people with a professional degree to have some knowledge of hypertension. But their actual completion of such a course is questionable and so is their form of education. Even if all this is held true the stress and nature of their job can be blamed for them to be ignorant of hypertension.

More people who were married had hypertension than those who were unmarried . This can be attributed to the stress that comes with supporting a family back home as opposed to earning for oneself. More non vegetarians were hypertensive than vegetarians and this can be attributed to hypercholesterolemia and hyperlipidemia caused by consuming non-vegetarian food like meat etc.

Of those who were hypertensive, there were more people who did not do exercise or partake in any physical activity. due to their busy schedule of work and also their work mainly involved less physical activity like accounting or tailoring and salesmen which are mostly slow jobs. Thus from this we can conclude that sedentary lifestyle is a risk factor for hypertension.

Surprisingly we found more people who were non-smokers were hypertensive than smokers. This was a little baffling as we know that smoking is a risk factor for hypertension and heart disease. But this could be attributed to our relatively small sample size or may be that they were not comfortable to reveal information due to social stigma. Similar observation was seen in relation with alcohol. Prevalence of hypertension among non-alcoholics was found to be more than alcoholics.

### Conclusions

50% were suffering from hypertension in our sample of the market population. We spread awareness as mentioned above a significant number of people were screened and found to be hypertensive on site. We could possibly have changed the course of their condition and prevented the morbidities associated with it. However apart from general education of the public , this subpopulation needs special attention including intensive health education in hypertension management. National screening for hypertension a silent killer is warranted and adequate blood pressure control is imperative to mitigate the mortality and morbidity associated with hypertension.

### Limitations of the study

We held a survey on 94 people unfortunately we were able to only tabulate 74 people as the others were not available the following days. Our screening included only men there was no specific time chosen for measuring the BP. Also all the three measurements were carried out on three consecutive days and not with one week intervals which is a more accurate assessment. The risk factors and other diseases or drugs were not taken into account and their effects were not considered in this study. Diabetes was not measured only asked in the questionnaire. Personal questions on exercise and alcohol could be inaccurate.

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