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RESEARCH ARTICLE

THE AWARENESS AND KNOWLEDGE OF HYPERTENSION AMONG UNDERGRADUATE STUDENTS IN CHENNAI

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ABSTRACT

Aim: The survey is conducted to create awareness and knowledge on risk factors of hypertension among undergraduate students in Chennai, India.
Objective: The aim of the current study was to use representative survey data to examine socio-demographic inequalities in the prevalence, awareness and management of hypertension students in Chennai.
Background: Hypertension is the major driver of the cardiovascular epidemic facing India in the 21st century. Understanding the causes, risk factors and effects associated with hypertension is essential for designing effective intervention strategies especially for young generation.
Reason: There are only few studies being done in awareness and control of hypertension especially among undergraduates in Chennai, India. Hypertension can cause the students have trouble in studying. Thus, a proper study and survey must be done in order to create the awareness in controlling hypertension.

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INTRODUCTION

High blood pressure (BP) is ranked as the third most important risk factor for attributable burden of disease in south Asia (2010). Hypertension (HTN) exerts a substantial public health burden on cardiovascular health status and healthcare systems in India (Park K. 21st ed, 2011). HTN is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease (CHD) deaths in India. The WHO rates HTN as one of the most important causes of premature death worldwide. Hypertension is the commonest cardiovascular disorder, posing a major public health challenge to population in socio-economic and epidemiological transition. Prehypertension in adolescents and young adults is a risk factor for developing hypertension in later years of life. So both patient and clinician are alerted to this risk and encouraged to intervene and prevent the disease from developing. Therefore the present study was undertaken to find out the awareness among undergraduate student reference to Chennai, India. Given the rising instancesof hypertension in developing countries undergoing epidemiological transition like India, increased awareness, treatment, and control of hypertension are basic to the reduction of cardiovascular disease risk and avoidance of the associated burden of illness. This study was embraced with the objective to assemble data on awareness and knowledge of hypertension in Chennai which represents undergraduate students. Such studies are an essential stride in the outline of hypertension counteractive action and control programs at a national level. (Mohan *et al*., 2007)

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MATERIALS AND METHODS

Undergraduate students from various background of study are aimed at. Therefore, some universities in Chennai were selected in this survey such as:

a) Saveetha University
b) Sri Ramachandra University
c) Meenaksi Ammal Dental College
d) Ragas University
e) Anna University

The study is an observational, descriptive, cross-sectional survey. A self-structured, pre-tested questionnaire was used for this survey. Total samples of one hundred (100) subjects were included in this study. These places were approached due concentrated population of undergraduate students from various backgrounds of study. The survey has been done from 11th December 2016 till 4th January 2017 in other words, the duration for this survey is 24 days. The study is an observational, descriptive, cross-sectional survey. A self-

structured, pre-tested questionnaire was used for this survey. Twenty (20) questions excluded general information were used in the questionnaire. Eighteen (18) closed-ended type questions and 2 open-ended questions were included in this questionnaire. A total sample of one hundred (100) subjects from various backgrounds of study and irrespective of sex was included in this study. People are approached randomly. All the subjects were approached with a questionnaire and the answers were recorded through an oral interactive session. Hence proper assessment regarding subjects' knowledge on the subject was made and explanation was givento them in case they were unaware.

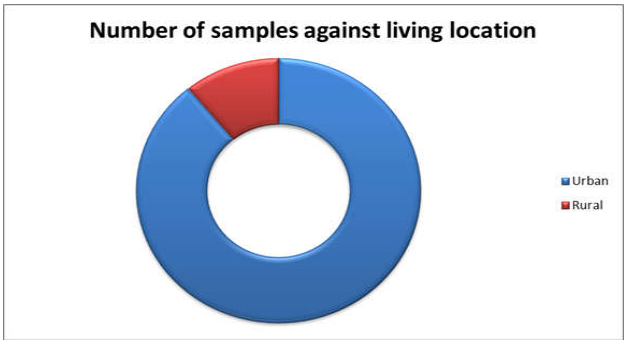
RESULTS

The results of the survey conducted are being illustrated in tables, graphs and charts as shown below. The answers selected by the 100 subjects were analysed for every question.Below are the tables of items selected by all 100 hundred subjects and the analysis was stated below of each table.

Living location

Table 1

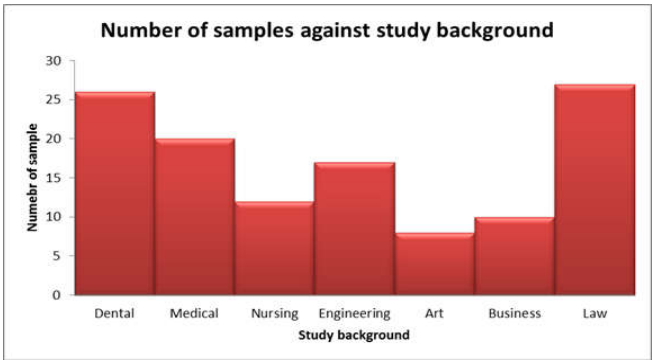
Items	Frequency	Percentage
Urban	90 subjects	90.0%
Rural	10 subjects	10.0%



Study Background

Table 2.

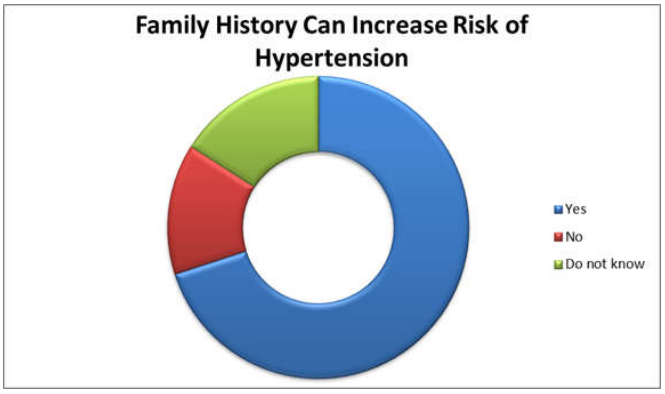
Items	Frequency	Percentage
Dental	25 subjects	25.0%
Medical	17 subjects	17.0%
Nursing	10 subjects	10.0%
Engineering	14 subjects	14.0%
Art	5 subjects	5.0%
Business	6 subjects	6.0%
Law	23 subjects	23.0%



Family history can increase risk of hypertension?

Table 3

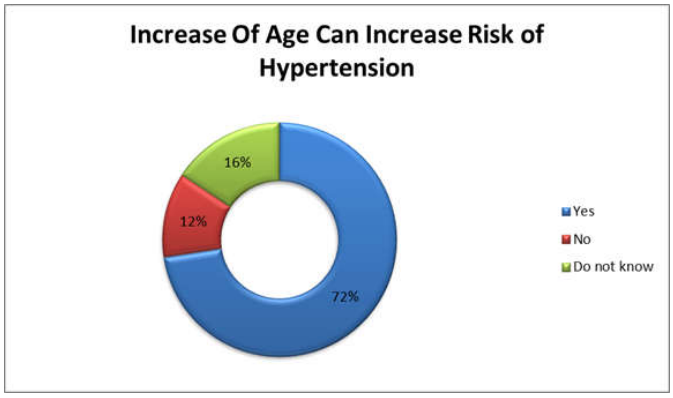
Items	Frequency	Percentage
Yes	76 subjects	76.0%
No	9 subjects	9.0%
Do not know	15 subjects	15.0%



Increase of age can increase risk of hypertension?

Table 4

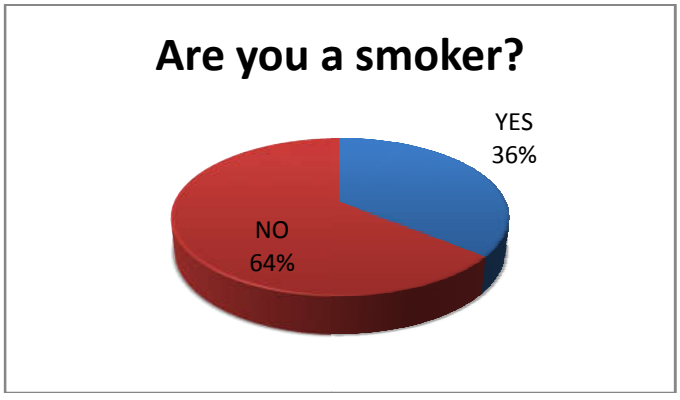
Items	Frequency	Percentage
Yes	72 subjects	72.0%
No	12 subjects	12.0%
Do not know	16 subjects	16.0%



Are you a smoker?

Table 5

Items	Frequency	Percentage
Yes	36 subjects	36.0%
No	64 subjects	64.0%

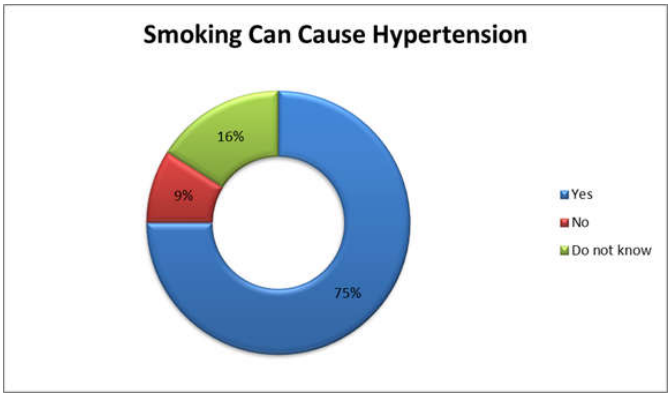


Looking at the results shown in Table 5, there was 64% of the samples did not even smoking while still there is a few (36%) of them are smokers. It is about 98% of those smokers are male and 2% are female.

Smoking can cause hypertension?

Table 6

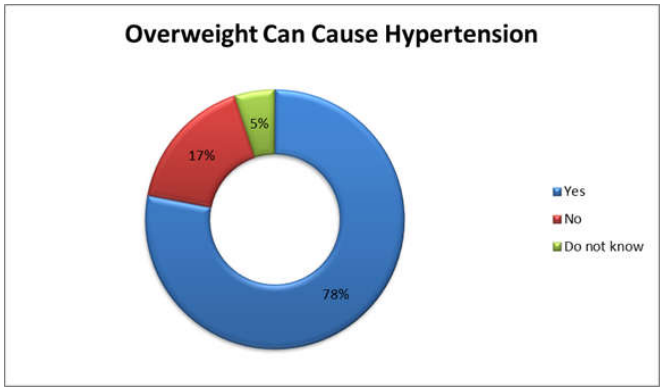
Items	Frequency	Percentage
Yes	75 subjects	75.0%
No	9 subjects	9.0%
Do not know	16 subjects	16.0%



Overweight can cause hypertension?

Table 7

Items	Frequency	Percentage
Yes	78 subjects	78.0%
No	17 subjects	17.0%
Do not know	5 subjects	5.0%

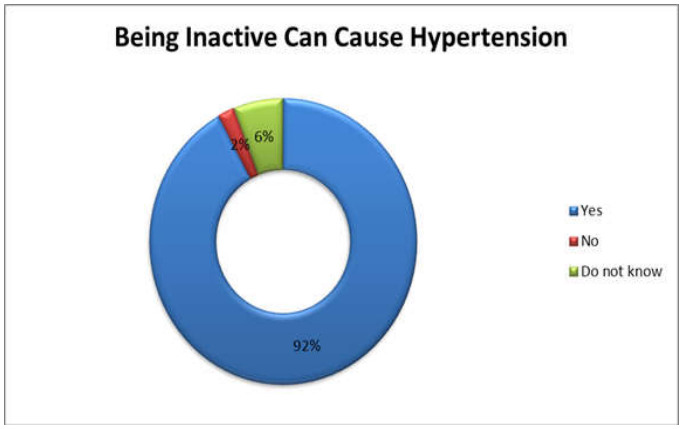


The results shown in Table 7 which are the total of 'yes' or 'no' answer for the question on if they aware on overweight can cause hypertension.There were78% of the total samples who know about obesity can lead to hypertension while only 17% chose "No" as their answer and the remaining were did not know about it.

Being inactive can cause hypertension?

Table 8

Items	Frequency	Percentage
Yes	92 subjects	92.0%
No	2 subjects	2.0%
Do not know	6 subjects	6.0%

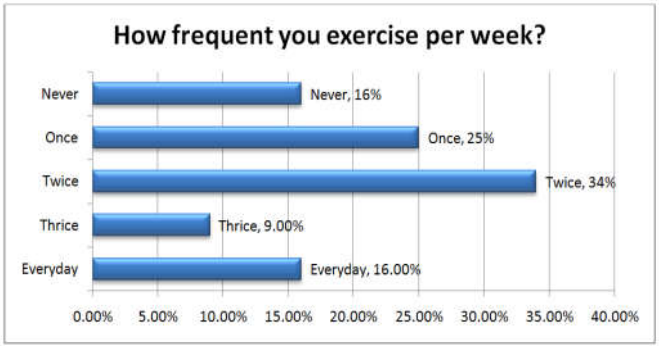


This question's aim was to verify on is it being inactive or unhealthy life can cause hypertension. Looking at the results shown above, we can see that majority of them which is 92% are aware on it while another 2% and 6% said that being inactive cannot lead to hypertension and do not even know about it respectively.

How frequent you exercise per week?

Table 9

Items	Frequency	Percentage
Everyday	16 subjects	16.0%
Thrice a week	9 subjects	9.0%
Twice a week	34 subjects	34.0%
Once a week	25 subjects	25.0%
Never	16 subjects	16.0%



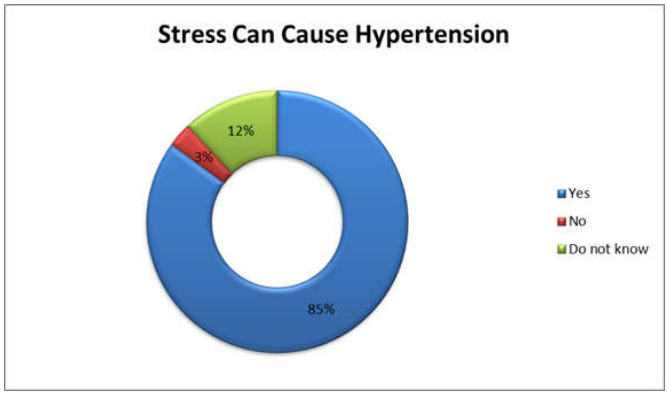
There is only 16% were having a healthy lifestyle where they were exercising every day, 9% of 100 samples were having exercise thrice a week. The most is twice a week which is 34% and the remaining 25% were having their exercise once a week. Unfortunately, still there is 16% of them are never touches the ground.

Stress can cause hypertension?

Table 10

Items	Frequency	Percentage
Yes	85 subjects	92.0%
No	3 subjects	3.0%
Do not know	12 subjects	12.0%

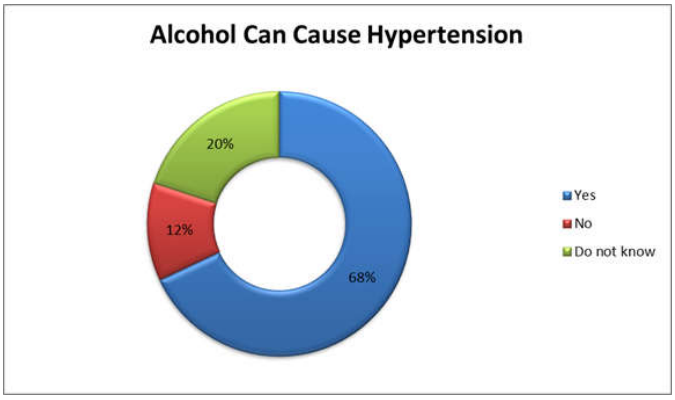
The results obtained showed that the most of them (85%) were aware on stress can increase the risk of development hypertension.



Alcohol can cause hypertension?

Table 11

Items	Frequency	Percentage
Yes	68 subjects	68.0%
No	12 subjects	12.0%
Do not know	20 subjects	20.0%

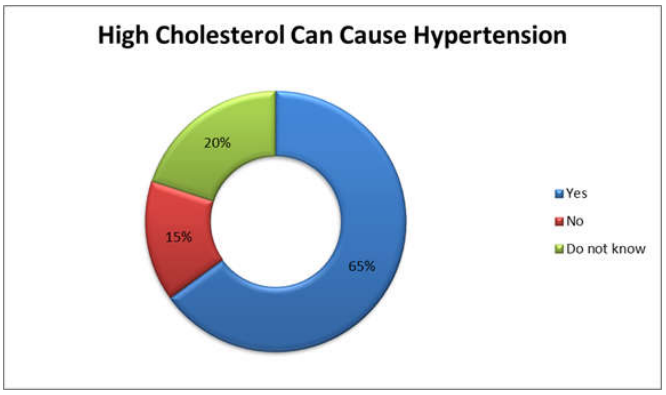


68% of 100 samples were agreed that alcohols can increase the risk of hypertension while another 32% said either alcohol can cause hypertension or did not know about it. It is more than half of them who chose "No" or "Do not know" are alcoholics.

High cholesterol can cause hypertension?

Table 12

Items	Frequency	Percentage
Yes	65 subjects	65.0%
No	15 subjects	15.0%
Do not know	20 subjects	20.0%

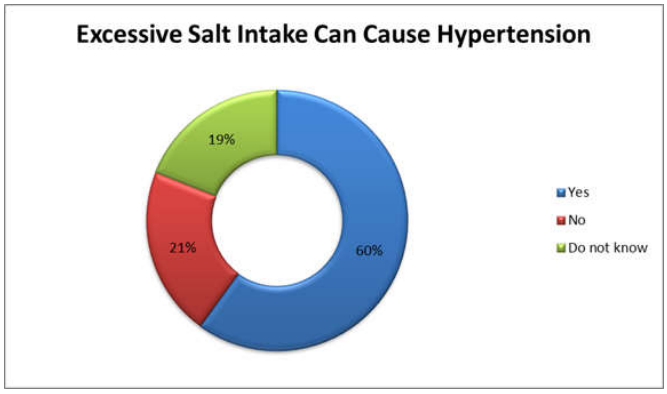


It looks like still more than half of 100 subjects were knowing that high cholesterol can contribute in causing hypertension

Excessive salt intake can cause hypertension?

Table 13

Items	Frequency	Percentage
Yes	60 subjects	60.0%
No	21 subjects	21.0%
Do not know	19 subjects	19.0%

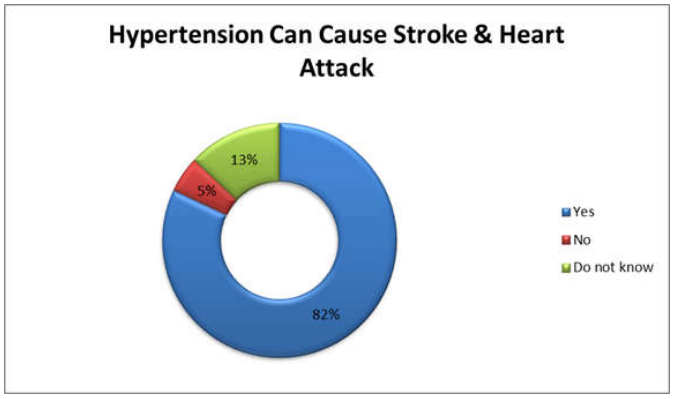


There was60% of the samples were choosing 'Yes' option and other 21% were choosing 'No'. Less than one-fifth of the total subjects did not know and aware on the excessive salt intake can lead to hypertension.

Hypertension can cause stroke and heart attack?

Table 14

Items	Frequency	Percentage
Yes	82 subjects	82.0%
No	5 subjects	5.0%
Do not know	13 subjects	13.0%

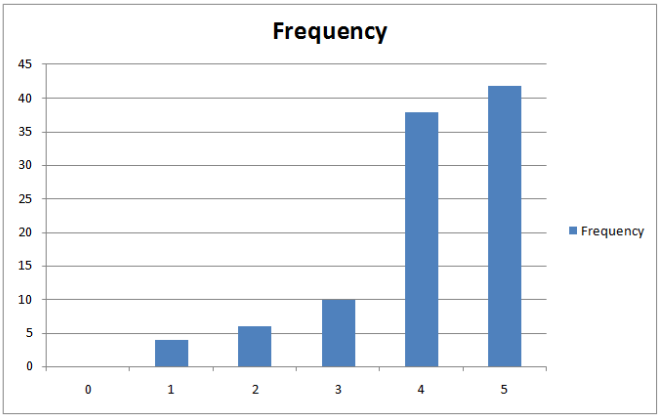


82% of the 100 subjects were agreeing that hypertension can cause stroke and heart attack. There is only 5% of them were not agree with that statement and other 13% did not have an idea about it.

From a scale of 1 to 5, how much do you know about hypertension?

Table 15

Scale	Frequency	Percentage
0	0 subject	0.0%
1	4 subjects	4.0%
2	6 subjects	6.0%
3	10 subjects	10.0%
4	38 subjects	38.0%
5	42 subjects	42.0%



Regarding the scale result on how much they know about hypertension shown above, most of them (80%) chose 4 and 5. Only 10% chose 3 which also showed a good expectation on young generation in Chennai. Unfortunately, although they are small in number but still there is remaining 10% chose 1 and 2 out of 5. Moreover, not even a single person chose 0 which means every 100 samples are aware and have at least a knowledge on hypertension.

DISCUSSION

In a study conducted in Israel, awareness on hypertension was 30% (Pletcher *et al*., 2008) in general population which was much less than our study. Similarly as per a study conducted in California the awareness was 18% (Pletcher *et al*., 2008). A study in Jamaica among 15 to 74 years age group concluded that prehypertension occurs in 30% of Jamaicans (Ferguson *et al*., 2008). Various studies in developing countries estimated a prevalence rate of hypertension among urban population ranging from 1.24% in 1949 to 36.4% in 2003. (Nissinen *et al*., 1988) The difference in prevalence rates could be due to different cut points used in defining the level of hypertension and also differing age groups constituting the study population. The prevalence of hypertension in Jaipur representing an urban north Indian population aged 20 years and above was 30% in men and 33% in women using JNC V criteria. (Gupta *et al*., 1995) The prevalence of hypertension in the urban population of West Bengal, representing eastern India was reported to be 24.9%, based on JNC VII criteria. (Das *et al*., 2005) The prevalence of hypertension among the urban population of Trivandrum city in Kerala in the south western India was reported to be 33.5% in the age groups between 45 and 64 years. (Beegom *et al*., 1995) The prevalence rates reported in the present study are therefore comparatively lower that that reported in other studies. This is similar to the findings of the World Health Organization (WHO) and Indian Council of Medical Research (ICMR) noncommunicable disease (NCD) risk factor surveillance where the prevalence of hypertension among the industrial population was 26% in all ten centres in India (Reddy *et al*., 2006) and 25.4% in Chennai. (Mohan *et al*.,) The awareness was less in previous studies as most of the studies were done in general population, but it was high in the present study (80%) as it was done only among undergraduate students. It is also noted that the awareness and knowledge on hypertension is high among males compared to females and the difference is statistically significant in this study. A greater of awareness on hypertension recorded in the present study could be due to the lifestyle and some other factors compared to the general population. The risk factors associated with hypertension are similar to that seen in other studies which were done in general population. So health-care providers should recognize the increased risk of prehypertension and should seek to identify and treat the modifiable risk factors in these persons especially among undergraduate students who are country young generation.

Conclusion

The study showed higher frequency of subjects who were aware about the hypertension (80%). However, all 100 subjects were responsive to the explanation given to them and they understood of the causes, risk factors and effects of hypertension on their lives as a young generation. Most of them tend to realize on how important is to stay healthy and try to avoid hypertension which can affect their own future. The study presented a comprehensive overview of awareness and knowledge on hypertension among undergraduate students in Chennai, different opinion and knowledge regarding the hypertension was different between each and everyone. Therefore, the study conducted showed the undergraduates exhibit positive attitude towards their health especially from hypertension. On the other hand, there is still a few of undergraduate students that still unaware and exhibit negative attitude towards hypertension and proper solutions should be think of in order to build a solid knowledge of hypertension for them. Authority, government, school, office, media, and medical practitioners must play their roles in order to explain and let the society especially young generation knows on the danger of hypertension which can ruin their lives as well as their future.

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The questionnaires were given as below:

QUESTIONNAIRE

Instruction: Please put a tick next to the answer of your choice or write in the space provided below.

Name: _____
Sex: _____
Age: _____
Religion: _____
Nationality: _____
Email (optional): _____

Where is your living location (area)?

a)Urban
b)Rural

What is the highest level of formal education you have completed?
a)Primary school
b)Secondary school
c)NCE
d)Diploma
e)First degree
f)Post-graduate Diploma
g)Masters

What is your field of study?
a)Medical
b)Dental
c)Engineering
d)Art
e)IT
f)Others:_____

From a scale of 1 to 5, how much do you know about hypertension?
a)1
b)2
c)3
d)4
e)5
f)Never heard even once

From a scale of 1 to 5, how much do you know about factors of hypertension?
a)1
b)2
c)3
d)4
e)5
f)Not even one

Do you have any relatives experienced hypertension?
a)Yes
b)No
c)Do not know

Are you aware that family history can increase risk for developing hypertension?
a)Yes
b)No
c)Do not know

Do you know as human getting older, we can develop hypertension?
a)Yes
b)No
c)Do not know.

Do you know smoking can cause hypertension?
a)Yes
b)No
c)Do not know.

Are you a smoker?
a)Yes
b)No

Do you know being overweight can cause hypertension?
a)Yes
b)No
c)Do not know.

Do you have healthy lifestyle?
a)Yes
b)No
c)Not sure

How frequent you exercise per week?
a)Everyday
b)Thrice a week
c)Twice a week
d)Once a week
e)Never

Do you know being stress can cause hypertension?
a)Yes
b)No
c)Do not know.

Do you know drinking alcohol can cause hypertension?
a)Yes
b)No
c)Do not know.

Are you an alcoholic?
a)Yes
b)No

Do you know high cholesterol can cause hypertension and heart disease?
a)Yes
b)No
c)Do not know.

Do you aware some drugs can cause hypertension?
a)Yes
b)No
c)Do not know.

Do you know excessive salt intake can cause hypertension?
a)Yes
b)No
c)Do not know.

Date: _____

Thank you very much for participating in this survey!

Prepared by: Mohamad Haikal Bin Zakaria (BDS 1st Year)

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