



A descriptive study to assess the prevalence of High Blood Pressure among adults in a selected community area, Bangalore.

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Abstract

Background: Hypertension is the single largest contributor to the avoidable deaths and diseases in India. It is a leading risk factor for cardiovascular disease, which accounted for 23% of total deaths and 32% of adult deaths in 2010–2013. India has committed to take an array of actions to meet the Sustainable Development Goals (SDG) target of reducing premature mortality from non-communicable diseases (NCDs) by one-third by 2030. However, much of the success in meeting this target hinges on its ability to check the rise of hypertension. The Global Burden of Hypertension study has highlighted that of the global burden of 212 million Disability-Adjusted Life Years (DALYs) related to hypertension, 18% occurred in India in 2015. The burden of hypertension in India is expected to rise considerably in the coming years due to rapid environmental and ‘life-style’ changes that emanate from hazardous working conditions and growing social pressures of survival.

Materials and methods: A descriptive study to assess the prevalence of High Blood Pressure among adults in a selected community area, Bangalore. Convenient sampling technique was used, and 100 adults were selected. Socio demographic data, Blood pressure procedure and Height, weight and BMI procedure were used to collect the data.

Result: The study result shows that out of 100 subjects 27% of the subjects were in prehypertensive stage, 32% of the subjects were affected with stage 1 hypertension, 29% of the subjects had stage 2 hypertension and 12% of the subjects had normal blood pressure. There is no significant association between prevalence of high blood pressure and socio demographic variables.

Conclusion: The study is recommends for a regular BP screening at least once in 3 months for the maintenance of the cardiovascular health in good condition.

Keywords: Prevalence of high blood pressure, adults in community area.

Introduction

The human being is a very complex, multicellular organism living a life which is dynamic in process. They are affected by enormous number of physiological and psychological complications. The heart is a muscular pump in the human, which pumps blood around the blood vessels of the circulatory system. Pumping action of the heart keeps blood in circulation.

Blood pressure is a measure of how hard heart works to force the flow of blood.[1] The cardio-vascular (from Latin words meaning “heart” and “vessel”) system comprise the blood, heart, and blood vessels. Blood is a fluid connective tissue circulating the entire body.

Blood vessels consist of arteries and veins which are meant to carry the blood from heart to different body parts and vice versa.² The heart is a muscular organ that pumps blood to all the body parts via arteries and veins. The human heart consists of four chambers, two auricles and two ventricles. The heartbeat has two phases. The first phase is when the heart muscles relaxes and allows the chambers to fill with blood, called as diastolic phase, the second phase is when the heart muscle contracts and pumps the blood from the chambers into the arteries called as systolic phase. Normal human heart rate is 72 beats per minute. [2]

Blood pressure (BP) is defined as the lateral pressure exerted by the blood on the walls of the blood vessels while flowing through them. It is usually expressed in terms of the systolic pressure over diastolic pressure and is measured in millimetres of mercury (mmHg). Above the surrounding atmospheric pressure (considered to be Zero for convenience). ² Systolic pressure is the peak pressure occurs when heart contracts to pump out blood. Diastolic pressure is the minimum pressure between heartbeats when the heart is

relaxed. Normal resting blood pressure in an adult is approximately 120 millimetres of mercury systolic, and 80 millimetres of mercury diastolic, abbreviated “120/80 mmHg”. High blood pressure is present in the body if the resting blood pressure is persistently at or above, called as High blood pressure.

According to JNC 7 guidelines of 2017, the updated classification of High blood pressure is followed - Normal systolic BP < 120 mmHg/diastolic BP < 80 mmHg as normal BP. □ Systolic BP 120 to 129 mm Hg/diastolic BP < 80 mm Hg is now defined as elevated BP. □ Systolic BP 130 TO 139 mm Hg/diastolic BP 80 to 89 mm Hg is now defined as stage 1 High blood pressure.

Systolic BP 140 to 159 mm Hg/diastolic BP 90 to 99 mm Hg is now defined as stage 2 High blood pressure Systolic BP of 160 mm Hg or higher/diastolic BP of 100 mm Hg or higher remains defined as stage 3 high blood pressure.

High blood pressure is divided into two categories (a) essential or idiopathic or primary high blood pressure is elevated blood pressure without an identified cause and accounts for 90%- 95% of all cases of high blood pressure, although the exact cause is unknown. Several contributing factors such as response to stress at a higher degree, increased sodium intake, greater than ideal body weight, diabetes mellitus, excessive alcohol consumption has been identified. (b) Secondary high blood pressure caused by underlying disease condition such as kidney disease, endocrine disease, and pregnancy-induced high blood pressure etc. [3] High blood pressure is one of the most common lifestyle disorders. In terms of trends in the prevalence of high blood pressure is every third person we meet, having suffered from highblood pressure. Among this 90% of persons, there is no known cause of high blood pressure

and this makes it even more important to be alert because of the etio-pathogenesis of high blood pressure yet unknown.

High blood pressure is posing a major public health challenge. It is one of the major risk factors for cardiovascular mortality, and a common risk factor for cerebro-vascular, and kidney diseases which accounts for 20-50% of all deaths. Developed countries are considering it as a leading cause of death but even developing countries do not lag behind in being affected by it.[4]

High blood pressure is often described as the “silent killer” as it cause damage to the body with no symptoms or only mild symptoms. High blood pressure can be termed as an “iceberg disease”. The submerged portion of the iceberg represents the hidden mass of the disease while floating tip denotes the signs and symptoms. When a person is diagnosed with high blood pressure, the initiation of treatment is often necessary to combat its short term and long-term effects on body organs.[5]

Changing lifestyle can go a long way toward controlling high blood pressure that includes eating a healthier diet with less salt, exercising regularly, maintain a healthy weight, and quit smoking. But sometimes lifestyle changes aren't enough. In addition to diet and exercise, recommended medication is necessary to lower blood pressure.

Materials & Method

Study Design: The study used descriptive research design.

Variables: Study Variables for the study includes prevalence of high blood pressure, Socio demographic variables such as age, Gender, education, religion, occupation, type of family, family monthly income, marital status, residence, regular exercise, duration of

high blood pressure, health problem, family history of high blood pressure, BMI, tobacco, smoking and alcohol.

Setting of the study: The study was carried out at Sanjaynagar community area, Bangalore.

Sample Size: 100 High blood pressure adults.

Sampling technique: convenient sampling technique was used to select the samples.

Inclusion criteria

- Age group between 30-89 years.
- Available at the time of data collection
- Able to understand Hindi, Kannada or English.

Exclusion Criteria

Adults who are

- Not willing to participate in the study

Development of tool: The development of tool required an extensive effort. Various literatures were reviewed, including previous researches, journals, newspaper articles, etc. Opinions were taken from experts and the research guides. The tool was validated and then put forth for the data collection.

Content Validity: Content validity of socio-demographic data was done prior to the pilot study period established by 12 experts of which includes 9 nurse educators and 3 doctors from community medicine department. The modification was made as per the expert's opinion and in discussion with the guide.

Reliability: Calibration of BP apparatus was done Diamond Delux (RCPL/19-20/ML/NN1241-01) Sphygmomanometer was calibrated from Reltec Calibration Pvt. Ltd., Rajajinagar, Bangalore.

Ethical clearance: Ethical Clearance was obtained from Institutional Research Committee of M.S.

Ramaiah institute of Nursing Education and Research (018/MSRINER/IRC/2016)

Pilot study: Pilot study was conducted at Mathikere rural and urban area, Bangalore.

A total of 10 adults were selected for the study. On completion of pilot study, it was feasible to undertake main study.

Data collection procedure: Formal permission was obtained from the concerned authority of Sanjaynagar, PHC, Bangalore and Joint Commissioner, Bangalore. Student researcher used non-probability convenient sampling technique. Self-introduction was given, and the purpose of the study was explained to each subject. Written consent was obtained from the subject to participate in the study. A total of 100 high blood pressure adults were selected for the study. Subject was interviewed and socio-demographic data was collected. The time taken by each subject was about 15-20 minutes. Approximately 5-10 subjects were assessed per day. The collected data were coded and entered in the master sheet.

Statistical method: The data analysis was done by using descriptive and inferential statistics. SPSS (version 20) was used to analyse the data.

1. Frequency and percentage distribution of socio-demographic variables of among adults age group of 30-89.
2. Frequency and percentage distribution of Prevalence of hypertension .and frequency and percentage distribution of Body mass index.
3. Association between hypertension and selected socio demographic variables.

Chi square was used to find the association between prevalence of high blood pressure and socio demographic characteristics. It was observed that there

was no significant association between the prevalence of hypertension and socio demographic characteristics.

Results

The collected data were analysed according to the objectives of study. The findings are presented below.

1. Identify the prevalence of hypertension among the age group between 30-89.

Frequency and percentage distribution were computed for sociodemographic characteristics of the subjects. It is observed that there were 100 individuals 27% of the individuals were in prehypertensive stage, 32% of the subjects were affected with stage 1 hypertension, 29% of the individuals had stage 2 hypertension and 12% of the individuals had normal blood pressure. The findings of the study clearly show that the individuals are not aware of their level of hypertension and thus screening of blood pressure is very important for early detection and treatment of hypertension.

2. Find the association between the levels of hypertension and selected socio demographic variables. Chi square was used to find the association between the levels of hypertension and sociodemographic characteristics. It was observed that there was non-significant association between level of hypertension and selected socio-demographic characteristics such as age($p=0.125$), gender ($p=0.310$), religion ($p=0.667$), education ($p=0.394$), occupation ($p=0.616$), family income ($p=0.860$), marital status ($p=0.070$), type of family ($p=0.643$), residence ($p=0.415$), regular exercise ($p=0.193$), duration of hypertension ($p=0.468$), family history of hypertension ($p=0.308$), health problem ($p=0.170$), habit of chewing tobacco ($p=0.295$), consumption alcohol ($p=0.812$), habit of smoking ($p=0.934$) of the subjects as the calculated p value is less than 0.05 level of significance.

Discussion

Based on the result of present study, there were 100 individuals 27% of the individuals were in prehypertensive stage, 32% of the subjects were affected with stage 1 hypertension, 29% of the individuals had stage 2 hypertension and 12% of the individuals had normal blood pressure.

The findings of the study clearly showed that the individuals are not aware of their level of hypertension and thus screening of blood pressure is very important for early detection and treatment of hypertension.

A similar study conducted by among young adults 18-40 years in peri urban districts of

Uganda to describe the prevalence of hypertension and pre-hypertension and factors associated with occurrence of hypertension has found that the overall prevalence of hypertension was 15% (95% CII4.2-19.6) and 40% were pre-hypertensive's. Among 553 hypertensive participants only 76(13.7%) were aware of their diagnosis.[6]

The findings of the study showed that there was non-significant association between level of hypertension and selected socio-demographic variables such as age ($p=0.125$), gender ($p=0.310$), religion ($p=0.667$), education ($p=0.394$), occupation ($p=0.616$), family income ($p=0.860$), marital status ($p=0.070$), type of family ($p=0.643$), residence ($p=0.415$), regular exercise ($p=0.193$), duration of hypertension ($p=0.468$), family history of hypertension ($p=0.308$), health problem ($p=0.170$), habit of chewing tobacco (0.295), consumption alcohol ($p=0.812$), habit of smoking ($p=0.934$).

A similar study conducted in 48 villages and 15 urban wards of Jabalpur district of central India, among 990 individuals aged above 20 years showed that there is significant association between

increasing age, parental history of hypertension, smoking, alcohol consumption, physical inactivity, $BMI \geq 27.5\text{KG/m}^2$ and high estimated per capita salt consumption over hypertension in urban population and in rural population there was significant association between increasing age, physical activity, central obesity, tobacco chewing, smoking and hypertension.[7]

Limitations

- Authenticity of the information regarding socio-demographic variables is based on the response of the subjects.
- Data collection period was of 4 weeks.
- The sample size was 100.

Conclusion

The present study findings indicated that out of 100 subjects 27% of the subjects were in prehypertensive stage, 32% of the subjects was affected with stage 1 hypertension, 29% of the subjects had stage 2 hypertension and 12% of the subjects had normal blood pressure. Study findings conclude that there was a no significant association between prevalence of blood pressure and socio demographic variables.

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