

Original article

Blood Pressure Status among the Parents of Medical Students

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Abstract

Background: In Bangladesh, the prevalence of hypertension is increasing day by day. Socio-demographic, economic factors, family history lifestyle and degree of awareness have significant associations with hypertension. **Methods:** This descriptive cross-sectional study was conducted among parents of third-year medical students of Dhaka Medical College, Dhaka, aged above 40 years old. In this survey, a total of 298 subjects were included. Data were collected through face-to-face interviews using a semi-structured Bangla questionnaire. The questionnaire included socio-demographic and blood pressure status. We measured the blood pressure of parents at morning and evening at the same time. **Results:** The study revealed that, nearly half (51.7%) of the respondents were male and 48.3% of the respondents were female. More than one third (36.1%) of the female respondents were in 40-45 years age group (N=144). More than one third (40.3%) of the male respondents were in 50-55 years age group (N=154). Mean age was 51±3 years. Approximately 42% male respondents were service holders and 72% of female respondents were housewives. Approximately 9.4% (mean systolic BP) and 19.5% (mean diastolic BP) of the respondents were hypertensive. Among respondents, 63.9% were diabetic. Nearly 21.1% of respondents had the habit of taking extra salt in food and 10.7% were tobacco users. About 40 % had other non-communicable diseases. **Conclusion:** This study showed prevalence of hypertension among the parents of medical students is higher in second decades of age with presence of some risk factors such as extra salt intake, tobacco use, other non-communicable diseases etc.

Keywords: Blood Pressure Status, Parents of medical students, Hypertension

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Introduction:

Hypertension is a major medical and public health concern due to its widespread prevalence and the incidence of hypertension is gradually increasing in emerging countries.¹ When blood pressure in the arteries is elevated, usually is persistently at or above 140mmHg of systolic blood pressure (SBP) or 90mmHg diastolic pressure (DBP) or both is considered as hypertension.²

It has been reported that if left unchecked and untreated, hypertension can lead to cardiovascular disease (CVD) and other associated conditions such as stroke, end stage renal disease, and death.³ Approximately 40% of deaths associated with CVDs are due to hypertension. In industrialized societies, an increase in blood pressure

has always been taken as an inevitable consequence of aging. This has led hypertension in a high proportion of elderly subject.⁴ Data obtained during the Framingham Heart Study, which followed patients for 30 years, agreed that systolic blood pressure (SBP) showed a continuous increase between the ages of 30 and 84 years or over. Isolated systolic hypertension is most prevalent in those aged 50 or over.⁵

Studies estimate that three-quarter of the world's hypertensive population live in low and middle-income countries and the prevalence of hypertension is higher in low and middle-income countries (31.5 %) than in higher income countries (28.5%).⁶ A recent

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report suggests that 18% of adults aged 25 years or over in Bangladesh suffer from hypertension with high prevalence in the urban rather than in rural population.⁷ According to Bangladesh NCD Risk Factor Survey 2018, prevalence of hypertension among all population of was 25.2%.⁸

The risk factors of hypertension are multifactorial and include being overweight, excessive salt intake, alcohol consumption and lack of physical activity. It can be controlled in part by doing lifestyle changes, dietary modification and by using anti-hypertensive medication.⁹ Better knowledge of hypertension has been reported to improve compliance to treatment and consequently improved control of the disease.¹⁰

According to iceberg phenomenon of disease, many hypertensive patients are undiagnosed. This hidden mass may exceed the known morbidity of the community. This study will help to understand the prevalence of hypertension among the parents of medical students and will provide a baseline data to the health care provider.

Materials & Methods

This cross sectional descriptive study was conducted among 298 respondents. Ages of respondents were above 40 years old included by purposive sampling techniques, who were parents of 3rd year medical students of Dhaka Medical College. The objective of the study was to find out the prevalence of hypertension among the parents of medical students during the period of November, 2020 to April, 2021. After taking informed written consent data were collected by face to face interview from each respondent by using a pre-tested semi-structured questionnaire and check list which included particulars of the respondents, socio-demographic information, information about blood pressure status and checking of blood pressure in their own residence. By using a mercury sphygmomanometer, BP was measured in the morning (8 am before meal) and also in the evening (8 pm before meal). Ethics was maintained strictly at different stages of this study. Hypertension was defined as having systolic blood pressure ≥ 140 mmHg or diastolic blood pressure ≥ 90 mmHg, Pre-hypertensive respondents were defined as having systolic blood pressure 120-139 mmHg or diastolic blood pressure 80-89 mmHg and normotensive respondent means having systolic blood pressure < 120 mmHg or diastolic blood pressure < 80 mmHg¹¹. After data collection, data were checked thoroughly for any inconsistency and incompleteness. Descriptive statistics were presented by mean, frequency and standard deviation in table, graphs and charts.

Results:

Nearly half (51.7%) of the respondents were male and 48.3% of the respondents were female. The maximum occupation of the male respondents (41.6%) was service

holder and most of the female respondents (72.2%) were housewife. More than one third (36.1%) of the female respondents were in 40-45 years age group (N=144). More than one third (40.3%) of the male respondents were in 50-55 years age group (N=154). Mean age was 51 ± 3 years. More than half (54.7%) of the respondents' family include below or equal to 4 members, 4-6 members are in 39.6% family, 6-8 members in 4.4% and above 8 members are in only 1.3% family.

Table 1 : Distribution of respondents by characteristics

Habit of tobacco use	Frequency	Percentage (%)
Yes	32	10.7
No	266	89.3
Extra salt		
Yes	63	21.1
No	235	78.9
Presence of other NCD		
Yes	119	39.9
No	179	60.1
Total	298	100

Table-1 explains that most of the respondents (89.3%) were found not to have the habit of tobacco use, only 10.7% of the respondents had the habit of tobacco use. No other Non-Communicable Disease (NCD) was present in most of the respondents (60.1 percent), rest of the respondents (39.9 percent) had other NCDs. Diabetes Mellitus was most common Non-Communicable Disease (NCD) among the respondents (63.9%), followed by thyroid problem (12.6%), cardiovascular disease (11.8%), arthritis (4.2%), kidney disease (2.5%) and rest (5%) of the respondents had other NCD.

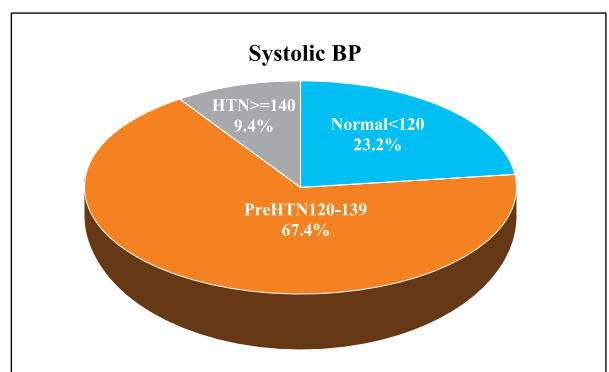


Figure 1: Systolic BP of the respondents

Figure 1 illustrates that considering the systolic blood pressure, most of the respondents (67.4%) were pre-hypertensive (120-139 mmHg), 23.2 % respondents had normal blood pressure and rest of the respondents (9.4%) were hypertensive (≥ 140 mmHg).

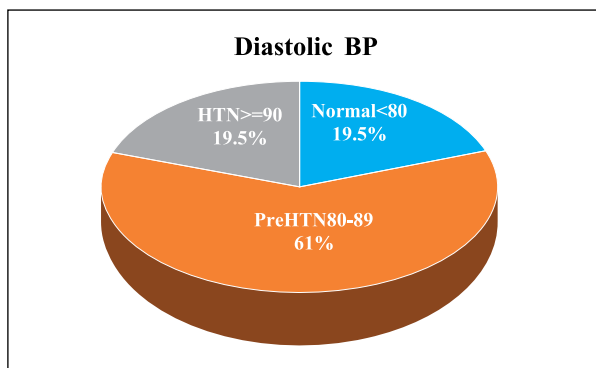


Figure3: Diastolic BP of the respondents

Figure 2 demonstrates that considering the diastolic blood pressure, most of the respondents (61%) were pre-hypertensive(80-89mmHg), 19.5% respondents had normal blood pressure(<80mmHg) and 19.5% of the respondents were hypertensive (≥ 90 mmHg).

Discussion

In this study we have seen that most of the respondents were male (51.7%), while rest being female (48.3%). From this study, it is found that, majority of the male respondents (41.6%) were service holder and female were housewives.

According to “Seventh Joint National Committee on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC7)” 2003 guidelines and “American College of Cardiology/American Heart Association (2017 ACC/AHA) Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults”, among the participants, aged ≥ 35 years, 25.7% and 48.0% of the respondents were hypertensive, respectively.¹² Another study in Bangladesh found that, the prevalence of hypertension was 12.5% (men 10.9 % and women 13.9 %). From this study, it is found that, while most of the respondents (89.3%) did not have the habit of tobacco use, only 10.7% of the respondents had the habit of using tobacco. Overall prevalence of smoking was 26.2% (54.8% in men and 1.3 % in women) in a study arranged in selected rural and urban areas of Bangladesh.

From non-communicable disease risk factor survey in Bangladesh we came to know that 67.7% of the tobacco users consumed manufactured cigarette. Overall consumption of smokeless tobacco was 31.7%. Overall study revealed the harmful relationship between blood pressure and smoking. Smokers appeared more likely to develop high blood pressure in comparison with non-smokers.¹³

Our study illustrates that, most of the respondents (60.1 %) were free from any other Non-Communicable Disease (NCD), but 39.9 % respondents had other NCD. Among the non-communicable diseases (NCD),

diabetes mellitus was most commonly found in the respondents (63.9 %), followed by thyroid problem (12.6%), cardiovascular disease (11.8 %), arthritis (4.2 %), kidney disease (2.5 %) & others type of NCD was present in 5 % of the respondents. A Nigerian survey shows that 17.9 % of the participants had coexisting diabetes mellitus(DM).¹⁴attitudes and practices on hypertension of 240 adult Nigerian Africans with hypertension and their impact on compliance with antihypertensive drugs METHOD: It was a descriptive survey of 240 consented consecutive adult patients with hypertension who attended the Cardiology Clinic of the Federal Medical Centre, Ido-Ekiti, Nigeria, between April 2008 and March 2009. The hospital is rural health institution in south west Nigeria RESULTS: One hundred and fourteen patients (47.5%

The strong association between hypertension and sodium intake is generally acknowledged and verified by several studies. Reduced dietary salt not only lowers blood pressure and the incidence of hypertension, but it is also linked to lower morbidity and death from cardiovascular illnesses. Prolonged mild salt reduction generates a significant drop in blood pressure in both hypertensive and normotensive people, regardless of gender or ethnic background, with bigger drops in systolic blood pressure with higher salt reductions.¹⁵

According to our study most of the respondents (78.9 %) did not take extra salt in food, but 21.1 % of the respondents had the habit of taking extra salt.

In relation to this study it can be said that, considering the systolic blood pressure, most of the respondents (67.4%) were pre-hypertensive (120-139 mmHg), 23.2 % respondents had normal blood pressure and rest of the respondents (9.4%) were hypertensive (≥ 140 mmHg). Considering the diastolic blood pressure in our study we can find that, most of the respondents (61 %) were pre-hypertensive (80-89 mmHg), 19.5 % respondents had normal blood pressure (<80mmHg) and 19.5 % of the respondents were hypertensive (≥ 90 mmHg).

Limitations and strength

Strength of this study was almost all respondents participated. There were some limitations. Firstly, data were collected only from the parents of 3rd year medical students of Dhaka Medical College due to COVID-19 situation. So, the result cannot be generalized. Secondly, only individuals, aged above 40 years were included in the survey. This is why the results did not show the figure of the whole community.

Conclusion

This survey showed prevalence of hypertension among the parents of medical students aged above 40 years old with presence of some risk factors such as extra salt intake, tobacco use, other non-communicable diseases

etc. Parents should be more aware about these risk factors We should give more concentration on parents so that they can lead a healthy life.

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