DOI: 10.21276/IJIPSR.2017.05.04.518

International Journal of Innovative Pharmaceutical Sciences and Research
www.ijipsr.com

SURVEY ON PREVALENCE, AWARENESS, TREATMENT, AND CONTROL OF HYPERTENSION AMONG PEOPLE OF NORTHERN PART OF BANGLADESH

[1]Md. Najem Uddin*, [1]Khadiza khanam, [1]Nurunnahar, [2]Saharia Yeasmin Asha, [1]A.S.M. Sakhawat Hossain

*[1]Department of Pharmacy, Varendra University, Rajshahi, **BANGLADESH***
*[2]Department of Biochemistry and Molecular Biology, Rajshahi University, **BANGLADESH***

Abstract

Hypertension (HTN) is an increasingly important medical and public health problem. In Bangladesh, approximately 20% of adult and 40–65% of elderly people suffer from HTN. It is a chronic medical condition in which blood pressure in arteries is elevated. We investigated the prevalence, awareness, treatment, and control of hypertension and associated risk factors in northern part Bangladeshi adult population based on our survey questionnaire. Using a population-based cluster random sampling strategy, data from155 adults aged >30 years were collected. Data collected included different parameters like blood pressure (BP) measurements, socio-demographic measurements, risk factors, preventive measure etc. Large-scale, preferably, nation-wide survey and clinical research are needed to explore the different aspects of HTN in Bangladesh.

Keywords: Hypertension (HTN), Survey work, Northern part of Bangladesh.

Corresponding Author:

Md. Najem Uddin

Department of pharmacy

Varendra University

*Rajshahi, Dhaka, **BANGLADESH***

***E-Mail:** najem.ru@gmail.com*

***Phone:** +8801737269296*

DOI: 10.21276/IJIPSR.2017.05.04.518

INTRODUCTION

Cardiovascular disease is rapidly becoming the leading cause of morbidity and mortality worldwide [1] with the changes in lifestyle and diet. Hypertension has been identified as the major risk factor leading to myocardial infarction, stroke, heart failure, and end-stage renal disease [2,3]. Hypertension has affected 26.4% of the world's adult population (972 million) in 2000, and the rates are expected to increase to 29.2% (1.56 billion) by 2025 [4]. Hypertension (HTN) is an important medical and public health issue because it is common and increases the risks of cardiovascular and kidney disease. Bangladesh has been experiencing epidemiological transition from communicable disease to non-communicable disease. The overall mortality rate has decreased significantly over the last couple of decades. But, deaths due to chronic diseases, specially the 'fatal four' i.e. cardiovascular disease, cancer, chronic respiratory disease, and diabetes, are increasing in an alarming rate [5]. Hypertension is an important contributor to one of the four i.e. cardiovascular diseases. Data related to HTN in Bangladesh are often insufficient, suffer from statistical flaws, and are not readily available. Many articles were published in local, non-indexed journals, which are not available online, and difficult to procure. Recognizing these limitations, the present review has been planned to compile the available data on this important public health issue. This will hopefully stimulate future research and act as a valuable source of information

METHOD

Study sites

The study population was obtained from northern part of Bangladesh, i.e. Rajshahi, Bogra, Naogaon, Natore, Chapainawabgonj, Gaibanda, Rangpur. The rural sites are similar in terms of population composition, density, household size, primary occupation, religion, and their disease profile; and also in area characteristics [6-8]. Rural Bangladesh is mostly plain land and riverine area. In general, the public health care delivery is very homogenous across the country. The services of community health workers, village doctors, and so on are very similar across the sites. Furthermore, there is no specific initiative from any public or private organizations to date, regarding managing chronic conditions per se hypertension, in these sites.

Study population

The study population was limited to individuals aged 25 years and above. Data was collected in a cross sectional survey during the year 2016, for a 2-month period at each site. We collect total

DOI: 10.21276/IJIPSR.2017.05.04.518

310 data having 146 male and 164 female patients. The study population was sampled by door to door survey, during the regular surveillance rounds. Because information was collected during regular household visits, only those present during the visit, and meeting the age criterion were included. This resulted in a biased selection of respondents, with an overrepresentation of women. To adjust for this bias, the research population was weighted to match the relative age, sex distribution of the populations each of the surveillance sites. Data were collected during the regular visits and only those present at the time of interview were included.

The questionnaire was translated to English and then back translated to Bangla to check the consistency of the meaning.. This pretested structured questionnaire collected information regarding diagnoses, initial treatment, current treatment, and health care provider. Respondents were asked 'Have you ever been told by any of the following personnel: MBBS doctor, specialized doctor, nurse, health worker, paramedic (Medical assistant/sub assistant community medical office), village doctor/quack, homeopath, kabiraj, or pharmacy man that you have any of the following medical conditions: hypertension, diabetes, abnormal blood lipids, overweight, chronic bronchitis, heart attack, angina/coronary heart disease, stroke, asthma, oral cancer, lung cancer and others'. Respondents then needed to identify the most recent provider of the diagnoses. All the information collected in this study was self-reported. We only reported about the hypertension in this paper.

Dependent and independent variables

The dependent variable for this study was non-adherence to antihypertensive treatment, which we have defined as discontinuation of medication at the time of interview, when treatment was received at initial diagnosis. It is categorized in to 'yes' and 'no'. The independent variables were age, sex, education, asset index, comorbidity, and health care provider. The individual sociodemographic factors were derived from preexisting surveillance

Statistical analyses

Data was presented with mean (standard deviation, SD) for continuous variables and with proportion for categorical variables. The overall and sex-specific prevalence's of hypertension were calculated. The study participants were divided into four age groups (B40, 40_49, 50_59, and 60_ years). Categorical variables were compared by chi-square statistics. Univariate regression analysis was performed to identify the factors that were associated with non-adherence. Any factor that provided a univariate p-value B0.05 was entered into a multiple regression model. Logistic regression analyses were performed to estimate odds ratios (OR)

DOI: 10.21276/IJIPSR.2017.05.04.518

and 95% confidence intervals (CI) of non-adherence associated with various factors, with and without adjustment for other explanatory variables. SAS (Version 8) Statistical software was used for the analysis.

RESULT AND DISCUSSION

Gender distribution:

In our study we have included 155 patients among which 73 male (47%) and 82 female (53%) which is shown by figure 1.

Table 1: Gender distribution of the patients

Sex	Number of patients	Percentage
Male	73	47%
Female	82	53%

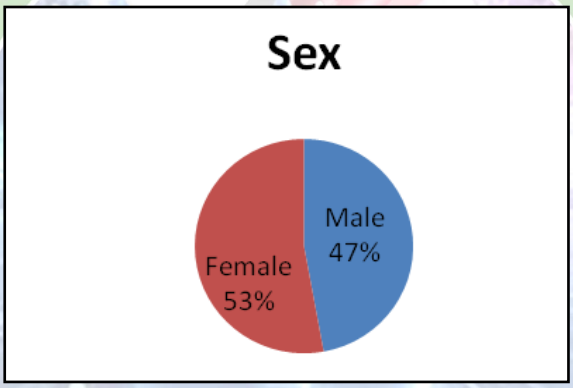

Fig. 1: Gender distribution of the patients

Age range of patients

In our study we observe different age range among the patients. We found that patients of age limit of 41-50 are highly affected by hypertension.

Table 2: Age range of patients

Age range	Number of patients
21-30	9
31-40	30
41-50	48
51-60	43
61-70	17
71-80	7
>80	1

DOI: 10.21276/IJIPSR.2017.05.04.518

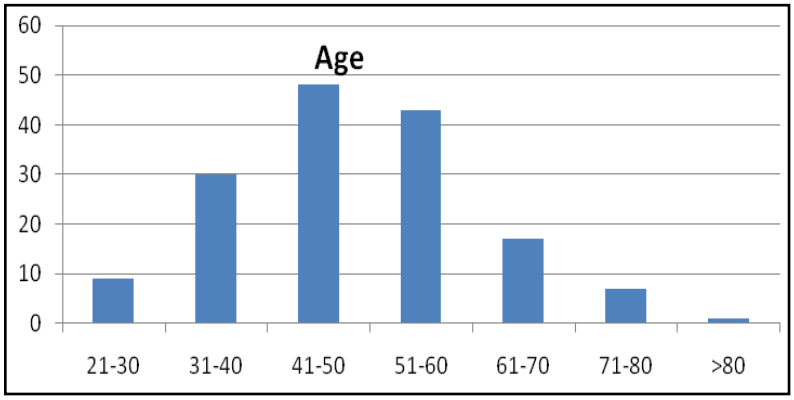

Fig.2: Age range of patients

Occupation of patients

In our study we categorize the study population in terms of their occupation. We observe that house wife female is more prone to hypertension. The representative table and bar diagram are as below.

Table 3: Occupation of patients

Occupation	Number of patients
Student	3
Bussinessman	16
Govt job	10
Non-govt. job	9
Day Laborer	2
Shopkeeper	0
Technician	0
Retired person	3
Teacher	12
House wife	74
Others	26

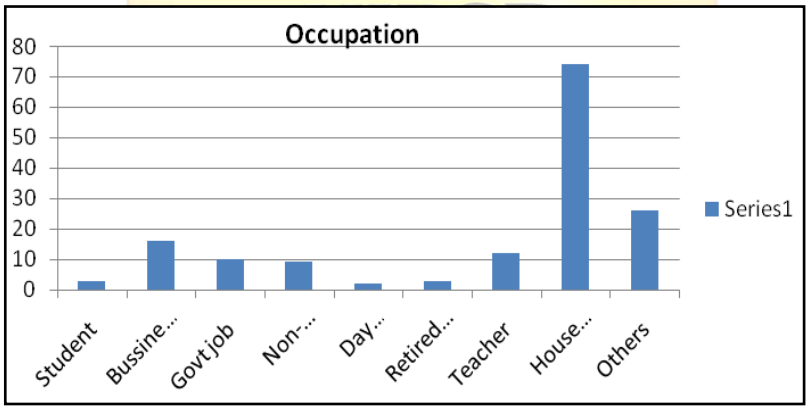

Fig 3: Occupation of patients

DOI: 10.21276/IJIPSR.2017.05.04.518

Family history of Hypertension

Family history has an impact on hypertension. In our study 43% of patients have family history of hypertension. The representative table and bar diagram are as below.

Table 4: Family history of Hypertension

Family history of Hypertension	Number of patients
yes	66
no	89

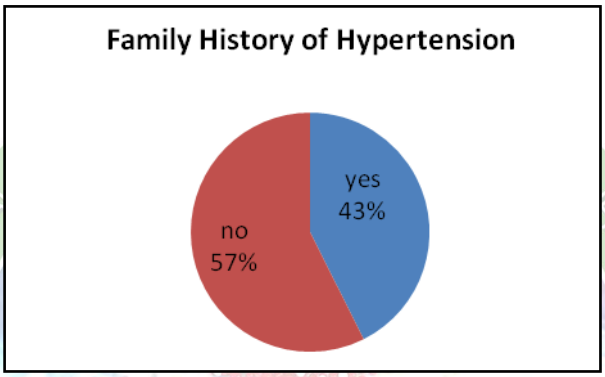

Fig.4: Family history of Hypertension

Economic condition

In our survey we found that majority of patients are from rich and middle class family.

Table 5: Economic condition

Economic condition	Number of patients
poorest	00
poor	33
middle	90
rich	32

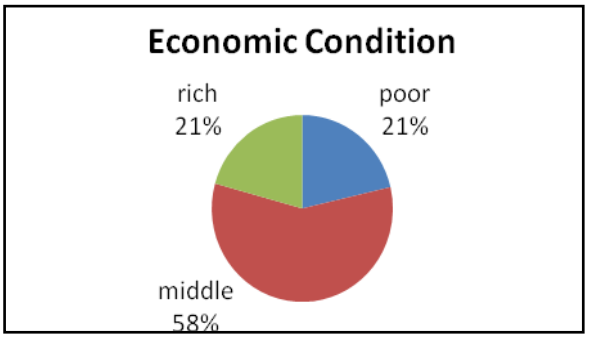

Fig. 5: Economic condition

DOI: 10.21276/IJIPSR.2017.05.04.518

Place of residence

68% of patients are from urban resident and 32% patients are from rural resident.

Table 6: Place of residence

Place of residence	Number of patients
rural	49
urban	106

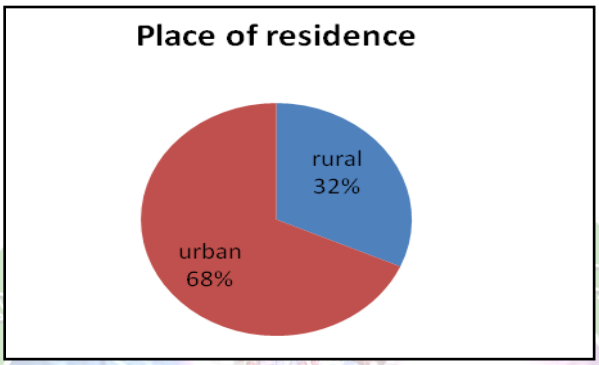

Fig. 6: Place of residence

Diagnosis of hypertension

Majority of patients are diagnosed by either MBBS doctor or by village doctor. Only small percentages of populations are diagnosed by Cardiologist.

Table 7: Diagnosis of hypertension

Diagnosis by	Number of patients
MBBS	90
Sp. doctor	11
village doctor	54
paramedic	00
Homeopath	00
pharmacy	00

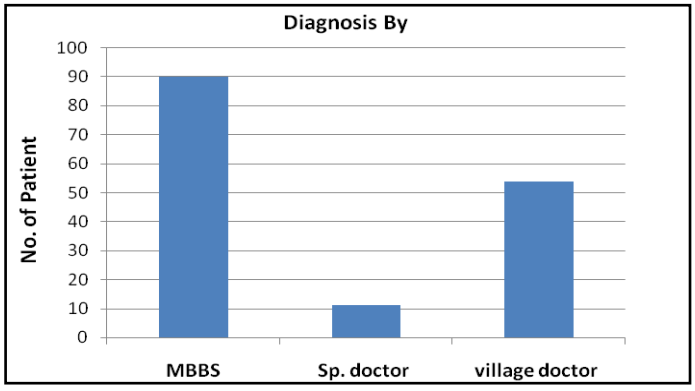

Fig.7: Diagnosis of hypertension

DOI: 10.21276/IJIPSR.2017.05.04.518

Smoking status

Smoking has a great impact on Hypertension. In our study we found that Among 155 patients 30% patients' smoke and rest of 70% are not used to smoking habit.

Table 8: Smoking status

Smoker?	Number of patients
Yes	46
No	109

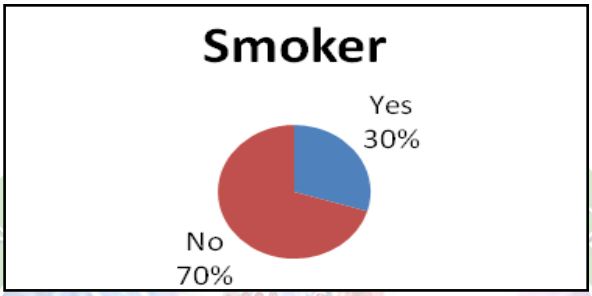

Fig. 8: Smoking status

Exercise Profile

In our study we found that 72% of study populations are not used to any remarkable physical exercise for preventive measure, 28% population take exercise in some extent.

Table 9: Exercise Profile

Exercise regularly?	Number of patients
Yes	43
No	112

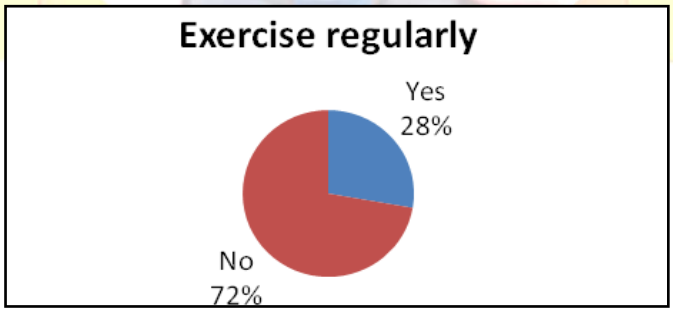

Fig. 9: Exercise Profile

Knowledge on cholesterol/ HDL/LDL

Cholesterol/ HDL/LDL have impact on hypertension. But, in our study we found that most of the patients have no knowledge on Cholesterol/ HDL/LDL.

DOI: 10.21276/IJIPSR.2017.05.04.518

Table 10: knowledge on cholesterol/ HDL/LDL

knowledge on cholesterol/ HDL/LDL	Number of patients
Yes	31
No	124

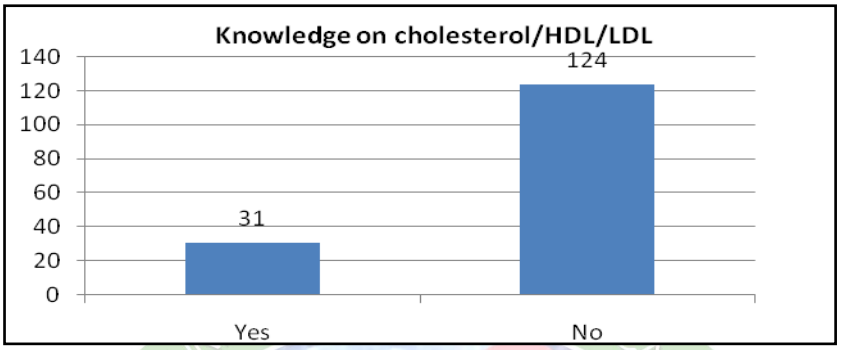

Fig.10: knowledge on cholesterol/ HDL/LDL

Physical activity

In our study we observe that 53% patients of study populations have no physical activity for preventive measure. Walking is the major physical activity for 43% patients. The following table and figure shows the physical activity profile of the patients.

Table 11: physical activity

physical activity	Number of patients
Bicycling	00
Jogging	6
Swimming	00
Walking	67
None	82

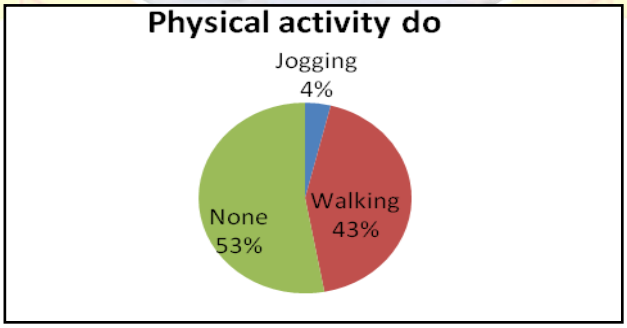

Fig.11: physical activity

CONCLUSION

In this study, we found that there is a wide range of factors, which are significantly associated with hypertension among the adults (age ≥30 years) in Bangladesh. The findings demonstrate that individuals with older age, higher socioeconomic status, higher education, some risks factor have

DOI: 10.21276/IJIPSR.2017.05.04.518

a significant influence on the odds of having hypertension. Most of patients are unaware about the preventive manner of hypertension. The information available thereby, would help to formulate national policy to combat the deadly epidemic more efficiently in future.

ACKNOWLEDGEMENTS

We gratefully acknowledge the contribution of the survey team who worked hard to collect quality data in a timely manner. We are also grateful to the study participants for their valuable time and assistance.

REFERENCES

1. Heron M. Deaths: leading causes for 2004. *Natl Vital Stat Rep*. 2007; 56(5):1–95.
2. Ikeda A, Iso H, Yamagishi K, et al. Blood pressure and the risk of stroke, cardiovascular disease, and all-cause mortality among Japanese: the JPHC Study. *Am J Hypertens*. 2009; 22(3):273–280.
3. Schiele F. Renal dysfunction and coronary disease: a high-risk combination. *J Nephrol*. 2009;22(1):39–45.
4. Kearney PM, Whelton M, Reynolds K, et al. Global burden of hypertension: analysis of worldwide data. *Lancet*. 2005;365: 217–223.
5. Strategic plan for surveillance and prevention of non-communicable diseases in Bangladesh 2011–2015. Directorate General of Health Services, Ministry of Health and Family Welfare; Dhaka: August 2011.
6. Razzaque A, Nahar L, Sarder AM, van Ginneken J, Shaikh AMK. Demographic surveillance system-Matlab: 1996 socioeconomic census. Scientific Report No. 83. Dhaka, Bangladesh: International Centre for Diarrhoeal Disease Research; 1998.
7. Lindeboom W, Dass SC, Ashraf A. Health and demographic surveillance report 2009_Abhoynagar and Mirsarai. Dhaka: International Center for Diarrheal Disease Research; 2011.
8. Razzaque A, Streatfield PK. Matlab DSS: Bangladesh. INDEPTH Monograph. 2001. Volume 1 Part C. Available from: http://www.indepth-network.org/dss_site_profiles/matlab.pdf.