

Recharch article :

Prevent of pre-hypertension and hypertension among the adults in Bangladesh .

A narrative study

A Research Report submitted to the Department of Pharmacy, Faculty of Allied Health Sciences, Daffodil International University.

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APPROVAL

This Project, “Prevent of pre-hypertension and hypertension among Bangladesh”: A narrative study. Submitted to the Department of Pharmacy, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Pharmacy and approved as to its style and contents.

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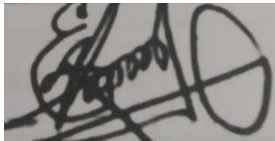
Dedication

I dedicate my work firstly Almighty Allah and secondly to my family especially my parents

DECLARATION

Today I declare that, this project report is done by me with help of my the supervisor Prof.Dr.Md.Ekramul Haque Professor, Department of Pharmacy, Daffodil International University impartial fulfillment of the requirement for the degree of Bachelor of Pharmacy. I am declaring that this project is my authentic and genuine work.

Supervised By



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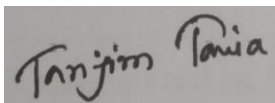
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ABSTRACT

Research question: Prevent of pre-hypertension and hypertension among the adults in Bangladesh.

Study place: Different area of Dhaka city.

Total Persons: 50 male and female.

Study variables: Age, Sex, education, occupation, income status, pattern of salt intake, dietary habit, physical activity, smoking and mental stress, Weight and Height.

Results: Among the 50 respondent over all gender distribution was 49% male and 51% female form different age group normotensive according to WHO classification that is persistence BP > 140/90 mm of Hg. Hypertensive male / female distribution is 34% and 29% respectively. Most of the respondents are non-smoker only 19% are smoker. Among the hypertensive group 35% are smoker and 31% are non-smoker.

Key words: Smoking, Exercise and Hypertension.

Content

Title	Page No.
Abstract	vi
Contents	vii-xi
List of Tables	ix

CHAPTER ONE: INTRODUCTION

Serial No.	Topic	Page No.
1.1	General Introduction	1
1.2	Background study of hypertension	2

CHAPTER TWO: LITERATURE REVIEW

Serial No.	Topic	Page No.
2.1	Literature review of hypertension	4

CHAPTER THREE: METHODOLOGY

Serial No.	Topic	Page No.
3.1	Method of hypertension	6
3.2	Area	6
3.3	Objective	6
3.4	Design and setting	6
3.5	Variable	6
3.6	Sample size	6
3.7	Duration of study	7
3.8	Data collection	7
3.9	Data collection tool	7
3.9.1	Data management	7
3.9.2	Data analysis	8
3.9.3	Presentation result	8
3.9.4	Ethical consideration	8

CHAPTER FOUR: RESULT AND SUMMARY

Serial No.	Topic	Page No.
4.1	Result	10
4.2	Result summary	18

CHAPTER FIVE: DISCUSSION

Serial No.	Topic	Page No.
5.1	Discussion	21

LIST OF TABLES

Serial No.	Topic	Page No.
Table 1	Frequency distribution of respondents by gender	10
Table 2	Gender cross tabulation	10
Table 3	Risk estimate	11

Table 4	Bp-sytolic : gender cross tabulation	12
Table 5	Age range of the respondents	12
Table 6	Bp status : different age group	13
Table 7	Education range of the respondents	14
Table 8	BP Status with the relation of education.	14
Table 9	Occupation of the respondents	15
Table 10	BP Status with the relation of occupation	15
Table 11	Prescription pattern of Hypertension	16
Table 12	The frequency and percentage of added salt with the meal.	17
Table 13	Relation of added salt with the meal and hypertension.	17
Table 14	The frequency and percentage of smoker and non-smoker.	17
Table 15	Table shows mental stress and hypertension.	18

CHAPTER SIX: CONCLUSION

Serial No.	Topic	Page No.
6.1	Conclusion	24

CHAPTER SEVEN: REFERENCES

Serial No.	Topic	Page No.
7.1	References	27

Chapter 1

Introduction

1.1 General introduction of hypertension

This guideline is for the clinical management of primary hypertension in adults (aged greater than 18 years). Hypertension is one of the most preventable causes of premature morbidity and mortality world-wide.

Hypertension is a major risk factor for stroke (ischemic and hemorrhagic), myocardial infarction, heartfailure, chronic kidney disease, peripheral vascular disease, cognitive decline and premature death. Untreated hypertension is associated a progressive rise often culminating in a treatment resistant state due to associated vascular and renal damage.

It is now recognized that the diseased and sclerotic arteries were most often the consequence of the hypertension and thus the term “essential hypertension” is redundant and the “primary hypertension” is preferred. Primary hypertension refers to the majority of people with sustained high blood pressure (approximately 90%) encountered in clinical practice, for which there is no obvious, identifiable cause. The remaining 10% are termed “secondary hypertension” for which specific causes for the blood pressure elevation can be determined (for example, Conn’s adenoma, Reno vascular disease).

Without treatment, high blood pressure, or hypertension, can lead to grave health conditions, including heart failure, vision loss, stroke, and kidney disease.

In this article, we look at the causes of high blood pressure and how to treat it. We also explain the blood pressure measurements that health authorities consider to be healthy and too high.

1.2 Background of the study

study. Prevalence has also been noted in seven countries' study along with decrease in mean systolic and diastolic pressures.

This suggests public health remedial measures to address growing hypertension in the community through health education about lifestyle changes, dietary modification, and avoidance of urban stress. Our findings also suggest a protective role of non -fatty diet, regular exercise, regular BP check, medication and public awaren.

Chapter – II

Literature review

Literature review

In the WHO/ ISH hypertensive group, isolated diastolic hypertension was present in 47.3% male and 40.6% female.

Three major dietary patterns were identified by using principal component analysis: the "balanced" pattern, which was characterized by rice, some meat, small fish, fruit, and vegetables; 2) the "animal protein" pattern, which was more heavily weighted on meat, milk, poultry, eggs, bread, large fish, and fruit.

Chapter – III

Methodology

3.1 Methods of hypertension

The sampling frame consisted of the final population total of Dhaka city which is roughly 1.1 million given by 2006 census of Bangladesh, Subdivided into 206 streets or Mohallas.

3.2 area:

The study is situated in the different part of the Dhaka city. Sample was collect selected 10 different streets of Dhaka City.

3.3 Objectives

To determine age-specific prevalence of hypertension in relation to diet and lifestyle factors among a selected group in Dhaka city.

3.4 Design and setting

Cross-sectional survey in 10 randomly selected streets in Dhaka city

3.5 Variables:

Independent variables:

Physical activity, smoking and mental stress.

Dependent variables:

Prevalence hypertension.

3.6 Sample Size:

The totals of 50 (Both male and female) study populations were covered in this study. A key person was identified using the stratified random interceptive technique among the city dwellers.

3.7 Duration of study

Three months from the date of commencement (June- August 2019) .Two weeks was spent on the structuring and planning the study and literatures review. Three weeks was in the field for data collection and another three week for data input and analysis. Remaining time was spent for writing and editing.

3.8 Data Collection:

Height was taken with the standard scale in bearer foot. BMI was calculated to identify over weight.

3.9 Data collection tool

A questionnaire was developed to collect data form the respondents. The questionnaires were pre-tested among 30 respondents to ensure its reliability and validity. The questionnaire had two parts. The first part contained questions on socio-demographic and economic status of the participation other part is the check list of anthropometry. Data were collected from other than pre-tested subjects.

3.9.1 Data management

At the end of each day collected questionnaires were rechecked for any correction or inconsistency. Necessary corrections had done accordingly and data were edited and the responses were coded for entry into computer programme.

3.9.2 Data analysis

The descriptive analysis included frequency distribution, mean, median and standard deviation as required. Uni variant analysis was done to describe the characteristics of the study population while internal comparisons were carried out by using bi variant analysis or multivariate analysis. To examine the relationship between variable, statistical significant test, chi-square tests were done and estimated the correlation between variables in appropriate section.

3.9.3 Presentation of result

The findings of the study were presented with the help of frequency distribution table, charts and diagrams. Descriptions of the findings of the research with necessary explanations were mentioned also.

3.9.4 Ethical consideration

Physical examination was done with the full consents of respondent in presence of an attendant. There was some direct benefit to respondents that they came to know their BP and its risk; the purpose of the study explained to every participant and asked for their response.

Data of the participants were maintained with strict confidentiality. Every participant assigned a unique code number for this study.

Chapter – IV

Result and Result Summary

4.1 Results

The study was carried out of 50 subjects different area of Dhaka city of Bangladesh to find to the prevalence of hypertension.

Table no. 01. Frequency distribution of respondents by gender.

GENDER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	24	49	49	49
	Female	26	51	51	100
	Total	50	100	100	

About the distribution of respondents by gender, it was revealed from the study that the 49% male and 51% female form different age group.

Table no. 02. BP-status: Gender cross tabulation

BP-STATUS * GENDER Cross tabulation

GENDER Total

BP-STATUS * GENDER Cross tabulation

		GENDER		Total
		Male	Female	
BP-STATUS	Normotensive	66%	71%	68%
	Hypertensive	34%	29%	32%
	Total	100%	100%	100%

Among the 50 respondents, of different age group it was revealed from the study that the prevalence of 32% is Hypertensive and 68% are Normotensive. Among those 34% male and 29% female are hypertensive.

Risk Estimate

	Value	95% Confidence Interval	
		Lower	Upper
Odds Ratio for BP_STATUS (Normotensive / Hypertensive)	.793	.543	1.157
For cohort GENDER = Male	.891	.741	1.071
For cohort GENDER = Female	1.124	.925	1.365
N of Valid Cases	500		

Table no. 03. Risk Estimate

Risk Estimate

Risk estimation shows odd ratio for BP .793, male odd ratio. Male .891 and female 1.124 within the 95% confidence interval in 500 sample which difference is not very significant male /female ratio all most equal

BP-SYSTOLIC: GENDER Cross (tabulation)

		GENDER		Total
		Male	Female	
BP-SYSTOLIC	90-99 mm of Hg	2%	4%	3%
	100-109 mm of Hg	9%	9%	9%
	110-119 mm of Hg	21%	24%	23%
	120-129 mm of Hg	20%	20%	20%
	130-139 mm of Hg	25%	24%	24%
	140-149 mm of Hg	15%	7%	11%
	>150 mm of Hg	10%	13%	11%
Total		100%	100%	100%

Table no. 04 BP-systolic: Gender Cross (tabulation)

Study revealed that among the hypertensive respondent 15% male SPB 140-149 mm of Hg and 10% SBP >150 mm of Hg. Female are found 7% SBP 140- 149 mm of Hg and 13% SBP >150 mm of Hg.

Table no. 5 Age Range of the respondents.

AGE-RANGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25-34 Years	09	27	27	27
	35-44 Years	21	48	48	74

45-54 Years	12	19	19	93
55-64 Years	08	7	7	100
Total	50	100	100	

Respondent age was 25- 64 years of age because most of the primary hypertension occurs in this age. 238 participants (48%) were in the age group of 35-44 years.

Table no. 06 BP-STATUS of different age group

BP-STATUS:

		AGE-RANGE				Total
		25- 34Years	35-44 Years	45-54 Years	55-64 Years	
BP- STATUS	Normotensive	79%	72%	53%	44%	68%
	Hypertensive	21%	28%	47%	56%	32%
	Total	100%	100%	100%	100%	100%

In this study is found that 56% of hypertensive respondent in the age group 55-64 years of age and 47% of the age group 45- 54 years of age.

Table no. 07 Education range of the respondents.

EDUCATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	09	11	11	11
	Primary school	14	33	33	43
	SSC	07	12	12	55
	HSC	05	11	11	66
	Hons	10	19	19	85
	Masters and above	05	15	15	100
	Total	50	100	100	

The study shows that most of the respondent is different age group. Among those most of them are in the primary education level.

Table no. 08. BP Status with the relation of education.

BP-STATUS: EDUCATION (Cross tabulation)

	EDUCATION						Total
	None	primary school	SSC	HSC	Hons	Masters and above	
Normotensive	68%	82%	80%	47%	56%	62%	68%
Hypertensive	32%	18%	20%	53%	44%	38%	32%
Total	100%	100%	100%	100%	100%	100%	100%

The study revealed that there is not the specific relation between hypertension and education but 53% and 44% hypertensive in the education level is HSC and Hons level. In study was found that most of the respondents are in the primary level education but there no relation with the high blood pressure.

Table no. 09. Occupation of the respondents

OCCUPATION

	Frequency	Percent	Valid Percent	Cumulative Percent
Day laborer	45	9	9	9
Service holder	160	32	32	41
Business man	64	13	13	54
Unemployed	2	0	0	54
Housewife	195	39	39	93
Student	10	2	2	95
Others	24	5	5	100
Total	500	100	100	

In this study among the 500 respondent 195 are house wife and 160 are service holder.

Table no. 10. BP Status with the relation of occupation

BP-STATUS: OCCUPATION (Cross tabulation)

		OCCUPATION					Total	
		Day laborer	Service	Business	Unemployed	Housewife	Others	
BP-STATUS	Normotensive	84%	59%	67%	100%	72%	83%	68%
	Hypertensive	16%	41%	33%		28%	17%	32%
Total		100%	100%	100%	100%	100%	100%	100%

Table no. 11 Category of monthly income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<5000	319	64	64	64
	5001-10000	51	10	10	74
	>10001	130	26	26	100
Total		500	100	100	

About 64% respondents have the income Taka < 5000 per month.

Most of the respondent are having income of <5000 taka per month.

Table no. 12. Table shows the frequency and percentage of added salt with the meal.

ADDED-SALT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NO	12	51	51	51
	1 PINCH	20	45	45	96
	2 PINCHES	19	4	4	100
	Total	50	100	100	

In this study it was found that most of the responded did take extra salt with their meal. Only 4% respondent are add 2 pinch (10gm) extra salt with their meal.

Table no. 13. Table shows relation of added salt with the meal and hypertension.

BP-STATUS: ADDED-SALT Cross tabulation

		ADDED_SALT			Total
		NO	1 PINCH	2 PINCHES	
BP_STATUS	Normotensive	60%	78%	74%	68%
	Hypertensive	40%	22%	26%	32%
Total		100%	100%	100%	100%

Table no. 14. Table shows the frequency and percentage of smoker and non-smoker.

SMOKER

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	35	81	81	81
	Yes	15	19	19	100
	Total	500	100	100	

In this study it was found the odd ratio for BP status (Normotensive/Hypertensive) in 15% confidence interval. There some relation with smoking and hypertension.

Table no. 15 Table shows mental stress and hypertension.

BP STATUS: MENTAL STRESS Cross tabulation

		MENTAL_STRESS					Total
		NO	MILD	NORMAL	MODERATE	STRESSFUL	
BP STATUS	Normotensive	57%	68%	69%	74%	44%	68%
	Hypertensive	43%	32%	31%	26%	56%	32%
Total		100%	100%	100%	100%	100%	100%

In this study it was found that among the hypertensive respondent 56% in the stressful life style.

4.2 Result summary

Among the 50 respondent over all gender distribution was 49% male and 51% female form different age group 68% normotensive. Hypertensive male / female distribution

is 34% and 29% respectively, that means male are more hypertensive than the female. Risk estimation shows odd ratio for BP .793, male odd ratio. Male .891 and female 1.124 within the 95% confidence interval in 500 samples which difference is not very significant male /female ratio all most equal . The hypertensive respondent 15% male SPB 140-149 mm of Hg and 10% SBP >150 mm of Hg. gender, educational level, and smoking, intake of salt, occupation, socioeconomic status, physical activity and mental condition. Here respondent age was 25- 64 years of age because most of the primary hypertension occurs in this age. 238 participants (48%) were in the age group of 35-44 years. Result found that 56% of hypertensive respondent in the age group 55-64 years of age and 47% of the age group 45- 54 years of age. The study revealed that there is not the specific relation between hypertension and education but 53% and 44% hypertensive in the education level is HSC and Horns level. Among the 50 respondent 39% are house wife and 32% are

service holder and revealed that 41% are service holder and 33% are business man .In this study it was found that most of the respondents have the family member of 1-6 in number and about 64% respondents have the income Taka < 5000 per month within the hypertensive group 50% having per month income of > 1000 taka. In this study it was found that most of the responded did take extra salt with their meal. Only 4% respondent are add 2 pinch (10gm) extra salt with their meal Study is revealed that there no strong relation with taking extra salt with the hypertension. Among the hypertensive group only 26% add extra salt 2 pinch (10gm) with their meal. On the other hand 40% did not add extra salt with their meal. Most of the respondents are nonsmoker only 19% are smoker. Among the hypertensive group 35% are smoker and 31% are nonsmoker. There might some association with smoking and hypertension and it was found the odd ratio for BP status (Normotensive/Hypertensive) is 1.192 in 95% confidence interval. There significant relation with smoking and hypertension. Respondent's food habits in this study are mean average of fish 03 days, mutton 0 day, pulses 04 days, beef 01 day, egg 02 days, vegetable 05 days, chicken 02 days and other food 0 5day . Most of respondent in this study are moderately heavy worker. About 57% are moderately worker and 38% are sedentary worker. Among the hypertensive respondent were found sleep habit 42 hours (35%) and 56 hours (35 %) in a week. In this study it was found that among the hypertensive respondent 56% in the stressful life style.

Chapter – V

Discussion

5 Discussion

34% Male and 29% female over all 32% hypertensive in the urban area of Dhaka city in the cut of point of 140/90 mm of Hg. Among the 500 respondents, of different age group it was revealed from the study that the prevalence of 32% is Hypertensive and 68% are Normotensive. Among those 34% male and 29% female are hypertensive. Risk estimation shows odd ratio for BP .793, male odd ratio. Male .891 and female 1.124 within the 95% confidence interval in 500 sample which difference is not very significant male /female ratio all most equal. Study revealed that among the hypertensive respondent 15% male and 10% SBP >150 mm of Hg. Female are found 7% SBP 140- 149 and 13% SBP >150 mm of Hg. Study also revealed that among the hypertensive respondent 17% male DPB 90-99 mm of Hg and 15% DBP 100-109 mm of Hg. Female are found 17% DBP 90- 99 mm of Hg and 11% DBP 100-109mm .In this study is found that 56% of hypertensive respondent in the age group 55-64 years of age and 47% of the age group 45- 54 years of age. In this study it was found that among the hypertensive respondent 56% in the stressful life style. smoking. Chi square test revealed some relation with the prevalence hypertension with the age variables, life style and stress full life.

this about 64% respondents have the income Taka < 5000 per month. This study shows that most of the responded did take extra salt with their meal. Only 4% respondent are add 2 pinch (10gm) extra salt with their meal. Study is revealed that there no strong relation with taking extra salt with the hypertension. Among the hypertensive group only 26% add extra salt 2 pinch (10gm) with their meal .on the other hand 40% did not add extra salt with their meal.

In conclusion, it shows walking and jogging morning and evening. Our findings also suggest that there is no relation extra with the meal and smoking have no relation with the hypertension.

5.1 Recommendation

Hypertension is easy to identify and is universally recognized as a determinant of CVD occurrence. Community- or provider-based health promotion programs carefully designed for the control of hypertension are needed.

5.2 Limitation

Occupational, educational, extra salt with meal, food pattern, sleeping habit and anthropometric etc. The study results may not be generalized from Bangladesh context where life style and food pattern vary widely.

Other limitations of the study were as following:

- The answer given by the respondent might be biased partly assumption and perception.
- Anthropometry and recording BP could not same time and same posture situation.
- It could not include all of the variables like family history of hypertension, diabetes and CVD

Chapter: VI

Conclusion

6.1 Conclusion

The study titled “An Epidemiological study on hypertension and its determinants in an urban Population of Dhaka city” was a descriptive type of cross-sectional one. The objective of the present study was to explore the prevalence of hypertension and its associated factors detriments in an urban community of Dhaka city. The data for the present study were collected by using a pre-tested questionnaire from 500 respondents residing in different area of Dhaka city. Both male and female with the age group 25- 64 years constituted the study population.

The study revealed that out of 500 respondents, Among the 500 respondent over all gender distribution was 49% male and 51% female form different age group and overall prevalence of hypertension in the study population was 32% and 68% normotensive according to WHO classification that is persistence BP > 140/90 mm of Hg. Hypertensive male / female distribution is 34% and 29% respectively, that means male are more hypertensive than the female. Risk estimation shows odd ratio for BP .793, male odd ratio. Male .891 and female 1.124 within the 95% confidence interval in 500 samples which difference is not very significant male /female ratio all most equal. The hypertensive respondent 15% male SPB 140-149 mm of Hg and 10% SBP >150 mm of Hg. Female are found 7% SBP 140- 149 mm of Hg and 13% SBP >150 mm of Hg and hypertensive respondent 17% male DPB 90-99 mm of Hg and 15% DBP 100-109 mm of Hg. Female are found 17% DBP 90- 99 mm of Hg and 11% DBP 100-109mm of Hg. Prevalence of hypertension comparative high en related with the other similar study in respect of age and sex.

Here respondent age was 25- 64 years of age because most of the primary hypertension occurs in this age. 238 participants (48%) were in the age group of 35-44 years and found that 56% of hypertensive respondent in the age group 55-64 years of age and 47% of the age group 45- 54 years of age. Primary hypertension is found in this age group.

The study revealed that the there is no specific relation between hypertension and education but 53% and 44% hypertensive in the education level is HSC and Hons level may be most of the respondent are in this level of education . Among the 500 respondent 39% are house wife and 32% are service holder (Figure no. 07) and reveled that among the hypertensive population 41% are service holder and 33% are business man as they are leading a challenging lifestyle. In this study it was found that most of the respondents have the family member of 1-6 in number and about

64% respondents have the income Taka < 5000 per month within the hypertensive group 50% having per month income of > 1000 taka so it is clear that hypertension is more prevalent within higher socio income group. In this study it was found that most of the responded did not take extra salt with their meal. Only 4% respondent are add 2 pinch (10gm) extra salt with their meal there no strong relation with taking extra salt with the hypertension. Among the hypertensive group only 26% add extra salt 2 pinch (10gm) with their meal. On the other hand 40% did not add extra salt with their meal. Most of the respondents are nonsmoker only 19% are smoker. Among the hypertensive group 35% are smoker and 31% are nonsmoker. There might some association with smoking and hypertension and it was found the odd ratio for BP status (Normotensive/Hypertensive) is 1.192 in 95% confidence interval. There significant relation with smoking and hypertension. Respondent's food habits in this study are mean average of fish 03 days, mutton 0 day, pulses 04 days, beef 01 day, egg 02 days, vegetable 05 days, chicken 02 days and other food 0 5day but any relation could not established between hypertension and food habit, and the food pattern were usual in the Bangladeshi style. Most of respondent in this study are moderately heavy worker, about 57% are moderately worker and 38% are sedentary worker. Among the hypertensive respondent were found sleep habit 42 hours (35%) and 56 hours (35 %) in a week. In this study it was found that among the hypertensive respondent 56% in the stressful life style.

Chapter VII

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