

Assessment of the Level of Knowledge Regarding Risk Factors and Complications of Hypertension between Urban and Rural Communities of Bangladesh

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Abstract

Original Research Article

Background: Although hypertension is a major risk factor for cardiovascular disease, it is largely ignored as a public health issue in developing countries. **Objective:** The aim of present study is to assess the level of knowledge among urban and rural population regarding risk factors of hypertension and its complications. **Method:** This cross-sectional study was conducted among 402 sample populations of 202 urban people in Kuratali Mahalla of Kuril area of Dhaka city and 200 rural people in Bakterchor village of Keranigonj Upazila of Dhaka District. **Results:** In this study (34.7%) were male and (65.3%) were female from urban area and from the rural. The sex ratio of male and female of this study is (49.5%) male and (51.5%) female. In this study only (6.5%) subjects were illiterate, among the literate (40.1%) were in primary level and (27.8%) completed the secondary level. The study found that (64.4%) of the respondents correctly answered the level of Hypertension. As management of Hypertension more than 90% of study subject mentioned regular use of medicine, regular diet control (72.2%) regular walking/exercise (43.8%) and the both. For the prevention of Hypertension (94.5%) respondents showed their opinion to quit smoking, (92.7%) were to take fruits and vegetables and low fat diet they also told to avoid alcohol consumption, Among all the respondents about (58.7%) had poor knowledge, (27.1%) moderate knowledge and (14.2%) had satisfactory knowledge. **Conclusion:** There was no discernible difference in knowledge between urban and rural residents. More research should be done to investigate the similarities in knowledge between urban and rural populations. To improve knowledge of hypertension, risk factors, and complications, hypertension awareness should be included in primary health care programs for both urban and rural populations.

Keywords: Knowledge, Risk Factors, Complications, Hypertension.

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INTRODUCTION

Hypertension is the most common and significant risk factor for cardiovascular disease, and it is becoming more prevalent and poorly controlled almost everywhere. It is also largely ignored as a public health issue in most developing countries [1, 2].

High blood pressure, also known as hypertension, is known as the "silent killer" because it has no symptoms and thus many people are unaware that they have it [1]. Every year, 7 million people die and 1.5 billion suffer as a result of high blood pressure, also known as hypertension [1]. According to statistics, there were an estimated 972 million people suffering from hypertension in the year 2000, and by 2025, it is expected that there will be approximately 1.56 billion people suffering from it. High blood pressure is a major

risk factor for stroke, coronary heart disease, heart and kidney failure, and other diseases. The higher the pressure, the greater the risk and the lower the life expectancy. Intensive research conducted in recent years to control hypertension at the community level has already yielded valuable results. The studies have shown that controlling hypertension in a population is feasible and that it can be accomplished using the existing health-care systems in various countries. This blood pressure control reduces the complications caused by high blood pressure. According to the World Health Organization, hypertension, or high blood pressure, is the leading cause of cardiovascular death. The World Hypertension League (WHL), a federation of 85 national hypertension societies and leagues, acknowledged that more than half of the world's hypertensive population is unaware of their condition. To address this issue, the WHL launched a global

hypertension awareness campaign in 2005 and designated May 17 as World Hypertension Day each year (WHD). Over the last three years, more national societies have become involved in WHD and have been innovative in their efforts to spread the message. In 2007, 47 WHL member countries participated in record numbers. During World Hypertension Week, all of these countries, in collaboration with their local governments, professional societies, nongovernmental organizations, and private industries, raised public awareness about hypertension through a variety of media and public rallies. The message reached over 250 million people via mass media such as the Internet and television. The World Heart League is confident that almost all of the estimated 1.5 billion people affected by high blood pressure can be reached as the momentum grows year after year. The enthusiasm and voluntary action of multiple stakeholders from each member country has contributed to WHD's success [1]. The theme was simply 'awareness of high blood pressure' in 2005, as the inaugural effort. The 2006 theme was 'Treat to Goal,' with a focus on controlling blood pressure. Blood pressures should be less than 140/90 mmHg for the general population and hypertensive patients without other complications, and less than 130/80 mmHg for those with diabetes or chronic kidney disease. These are the cut-off values suggested by international and Canadian standards [3]. The 2007 WHD theme was 'Healthy diet, healthy blood pressure'. The World Heart League intends to raise awareness not only of hypertension, but also of factors contributing to an increase in the incidence of hypertension and ways to prevent it, through such specific themes. The theme for 2008 was 'Measure your blood pressure...at home,' in an effort to empower the public. Recent studies confirm the ease, accuracy, and safety of using home blood pressure monitors [4]. Hypertension puts people at risk for a variety of serious complications, including coronary heart disease, stroke, congestive heart failure, and renal dysfunction, and it is one of the leading causes of death in the United States, accounting for 20-50% of all deaths [1, 2].

Although prevention is rarely achieved, treatment can lead to a lower incidence of complications such as stroke, coronary heart disease, heart failure, and kidney disease. By 2030, 23 million cardiovascular deaths are expected, with low- and middle-income countries accounting for 85% of the total [1].

According to the World Health Report 2002, there were approximately 600 million hypertensive people worldwide in 2000. Hypertension is estimated to kill 7.1 million people each year, accounting for about 13% of all deaths worldwide. Because the majority of blood pressure-related deaths or nonfatal events occur in middle age or among the elderly, the loss of life years is a smaller proportion of the global total, but it is still significant. Blood pressure and hypertension have been shown to be inversely related to socioeconomic status in developed countries, but such correlations are not always evident in developing countries.

Health promotion based on societal knowledge and perceptions of chronic diseases such as diabetes and hypertension is regarded as an essential component of any disease control and prevention strategy [1]. Although awareness alone will not improve cardiovascular health, it is a necessary prerequisite for making sound health decisions. According to studies, knowledge of hypertension risk factors varies between urban and rural areas. It is critical for health professionals to recognize the level of hypertension awareness among the population, as well as the sources of relevant medical information, in order to promote effective health management and implement future protection programs. The primary goal of this study was to compare the level of knowledge about hypertension risk factors between urban and rural communities. This research was carried out in Kuratali mahalla of Dhaka's Kuril area and Bakterchor village of Dhaka's Keraniganj upazila.

OBJECTIVE

The aim of present study is to assess the level of knowledge among urban and rural population regarding risk factors of hypertension and its complications.

Specific Objectives

1. To assess the level of knowledge about hypertension.
2. To assess the level of knowledge about the risk factors of hypertension.
3. To assess the level of knowledge about complications of hypertension.
4. To compare the level of knowledge of hypertension and its complication between rural and urban population.

METHODOLOGY

Type of study	Cross-sectional study
Place of study	Kuratali mahalla of Kuril area of Dhaka city and Bakterchor village of Keraniganj upazila of Dhaka district
Study period	January 2011– June 2011
Study population	A total of 402 patients were included in the study
Sampling technique	Technique simple random sampling

SELECTION CRITERIA

Inclusion Criteria

- Permanent residence of the study area.
- All male and female of more than 30 years of age irrespective of religion and customs.
- Those who are willing to participate in the study.

Exclusion criteria

- Physically and mentally handicapped.

Data Collection Procedure

Data was being collected through face to face interview. After obtaining the consent from the respondent's socio-demographic information were collected and filled up in the first part of the questionnaire. After that questions related to knowledge on risk factors of hypertension and its complications were asked and filled up.

Knowledge Level Scoring

To assess the level of knowledge, one scoring system was adopted. There are nine knowledge related questions. Each question has some options. According to the number of options mentioned by the respondents, against one question a score was given. Summing the total scores was made percentage against total number

of options of all nine questions. Then the score was graded as follows;

Poor	<40%
Moderate	40%-60%
Satisfactory	60%- 80%
Excellent	80%-100%

Data Processing and Analysis

After the completion of data collection, data was edited, coded and entered in computer. Frequency tables of socio-demographic characteristics were shown by percentage cross tables with test of significant among knowledge level and socio-demographic characteristics were also done. All data were analyzed by using SPSS.

RESULTS

Table 1 shows the age distribution of the respondents. Among the total respondents 31.3% (urban - 28.2%, rural - 34.5%) were of 31 to 40 years age group, followed by 25.9% (urban - 26.7%, rural - 25.0%) were of 41 to 50 years age group, 23.4% (urban - 30.7%, rural - 16.0%) were of 21 to 30 years age group, 8.5% (urban - 6.9%, rural - 10.0%) were of 51 to 60 years age group, 7.7% (urban - 2.5%, rural - 13.0%) were of above 60 years age and rest 3.2% (urban - 5%, rural - 1.5%) were below 20 years of age.

Table 1: Distribution of the respondents by age between urban and rural

Age group in years	Area of residence				Total (402)	
	Urban (202) Percentage (%)		Rural (200) Percentage (%)		Percentage (%)	
Up to 20	10	5.0%	3	1.5%	13	3.2%
21 to 30	62	30.7%	32	16.0%	94	23.4%
31 to 40	57	28.2%	69	34.5%	126	31.3%
41 to 50	54	26.7%	50	25.0%	104	25.9%
51 to 60	14	6.9%	20	10.0%	34	8.5%
Above 60	5	2.5%	26	13.0%	31	7.7%

Table 2 shows that among the respondents, in urban area 70 (34.7%) were male were and 98 (65.3%) were female and among the rural respondents 99

(49.5%) were male and rest 101 (50.5%) were female. The male female ratio was 42:58. See the table 2 below-

Table 2: Distribution of subjects by sex in urban and rural area

Sex	Area of residence				Total (402)	
	Urban (202) Percentage (%)		Rural (200) Percentage (%)		Percentage (%)	
Male	70	34.7%	99	49.5%	169	42.0%
Female	132	65.3%	101	50.5%	233	58.0%
Total	202	100.0%	200	100.0%	402	100.0%

Table 3 shows that, among them 90% (urban - 87.1%, rural - 93.0%) were married, 5% (urban - 7.4%, rural - 2.5%) were widow, 4% (urban - 4.5%, rural -

3.5%) were unmarried and rest 1% (urban - 1.0%, rural - 1.0%) were divorced. See the table below-

Table 3: Distribution of respondents by marital status between urban and rural area

Marital status	Area of residence				Total (402)	
	Urban (202) Percentage (%)		Rural (200) Percentage (%)		Percentage (%)	
Married	176	87.1%	186	93.0%	362	90.0%
Unmarried	9	4.5%	7	3.5%	16	4.0%

Widow	15	7.4%	5	2.5%	20	5.0%
Divorced	2	1.0%	2	1.0%	4	1.0%
Total	202	100.0%	200	100.0%	402	100.0%

Table 4 shows that, among the respondents 96% (urban - 98.5%, rural - 93.5%) were Muslim, 3.8%

(urban - 1.5%, rural - 6.0%) were Hindu and rest 0.2% (rural - .5%) were Christian by religious believe.

Table 4: Distribution of respondents by religion between urban and rural

Religion Status	Area of residence				Total (402)	
	Urban (202) Percentage (%)		Rural (200) Percentage (%)		Percentage (%)	
Islam	198	98.5%	186	93.5%	384	96.0%
Hinduism	3	1.5%	12	6.0%	15	3.8%
Christianity	0	.0%	1	0.5%	1	0.2%
Total	201	100.0%	199	100.0%	400	100.0%

Figure 1 shows that, urban respondents mentioned headache (95.5%), neck pain (91.6%), vertigo (61.4%), nausea (49.5%), restlessness (59.4%) and chest-tightness (44.1%) as symptoms of

hypertension while rural respondents mentioned, headache (87.5%), neck pain (58%), vertigo (65.5%), nausea (55%), restlessness (78.0%), chest tightness (76.5%) as symptoms of hypertension.

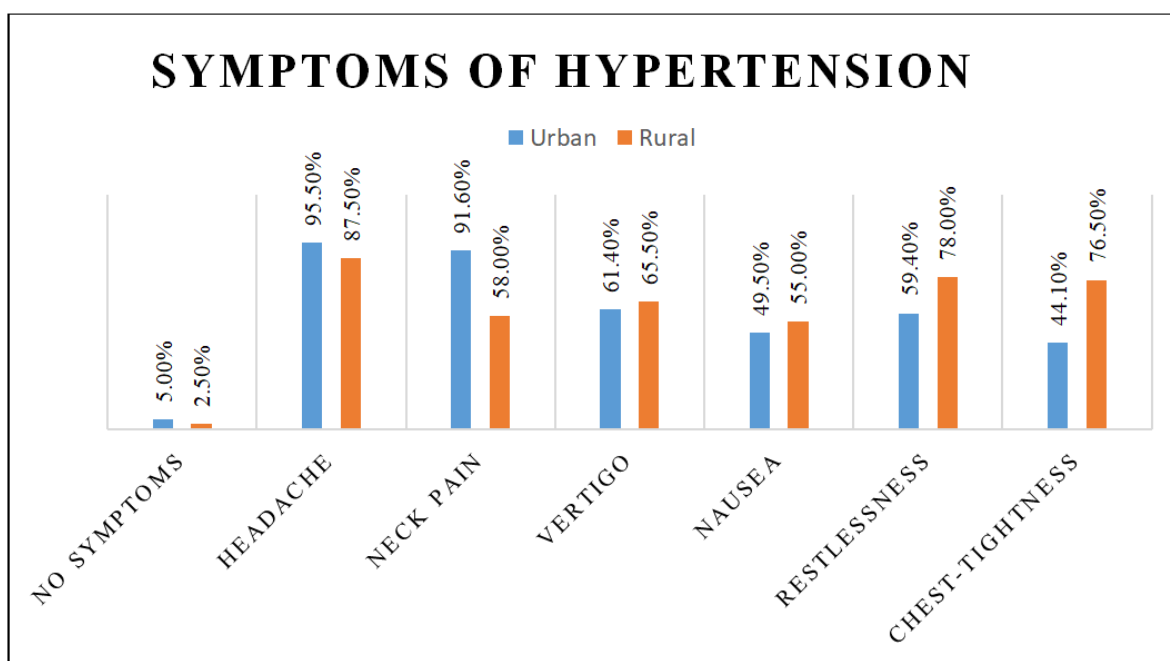


Figure 1: Level of knowledge on symptoms of hypertension between urban and rural population

Table 5 shows the risk factors of hypertension, urban respondents mentioned mostly mental stress (92.5%) and Fat consumption (64.7%) and age (64.7%),

while rural respondents mentioned mental stress (94.0%), positive family history (65.0%) and age (52.5%).

Table 5: Distribution of respondent's knowledge on risk factors, urban compare to rural

Risk factors of hypertension	Area of residence			
	Urban (202) Percentage (%)		Rural (200) Percentage (%)	
Age	130	64.7%	105	52.5%
Fat consumption	130	64.7%	79	39.5%
Family History	70	34.8%	130	65.0%
Obesity	70	34.8%	57	28.5%
Diabetics	69	34.3%	54	27.0%
Smoking	107	53.2%	63	31.5%
Mental Stress	186	92.5%	188	94.0%

Figure 2 shows complication of hypertension, urban respondents mentioned heart attack (77.1%), stroke (75.6%) and heart failure (59.7%). On the other

hand rural respondents mentioned stroke (83.0%), heart attack (71.0%), and heart failure (59.7%).

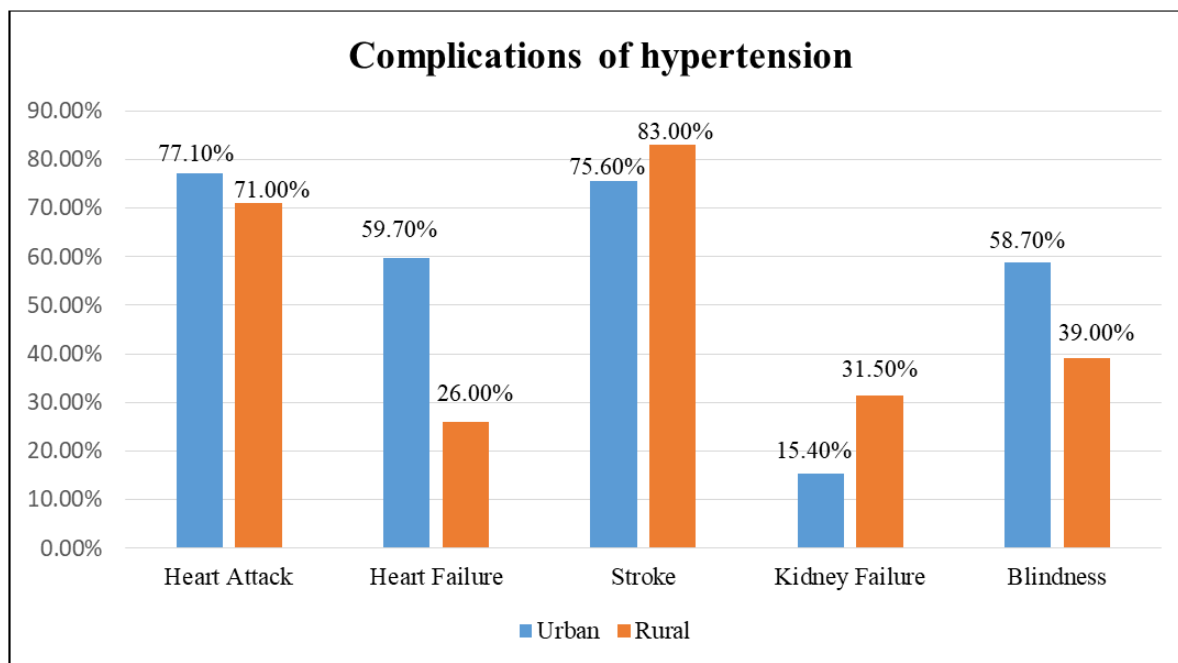


Figure 2: Difference of knowledge level of hypertension on complication between urban and rural

Table 6 shows respondent’s knowledge about prevention of hypertension, urban respondents mentioned prohibition of smoking (84.0%), mental stress managing (79.5%) and eating more vegetables &

fruits. While rural respondents gave emphasis on managing mental stress (94.0%), reduce excessive weight, (76.5%) and exercise (60.0%).

Table 6: Respondent’s knowledge about preventive measures between urban and rural

Preventive measures	Area of residence			
	Urban (202)		Rural (200)	
	Count	Percentage (%)	Count	Percentage (%)
No Smoking	168	84.0%	72	36.0%
No Alcohol	82	41.0%	44	22.0%
Eat more vegetables & fruits	149	74.5%	78	39.0%
Regular exercise	63	31.5%	120	60.0%
Weight loss	77	38.5%	153	76.5%
Less Mental Stress	159	79.5%	188	94.0%

DISCUSSION

Hypertension contributes significantly to the global disease burden [5]. It poses a significant public health challenge to both developing and developed countries, including Asia [6, 7]. The prevalence and rate of hypertension diagnosis in children and adolescents appear to be rising [8]. Participants in this study were one-third male and two-thirds female from urban areas, and the same ratio of male and female from rural respondents. Ninety percent of them were married, 5% were widowed, and 4% were unmarried. By religion, nearly 96 percent were Muslims, while only about four percent were Hindu.

The correct blood pressure reading for hypertension was given by two-thirds of the study's

participants. During the study, respondents reported symptoms of hypertension such as headache (91.5%), neck pain (74.9%), and vertigo (63.4%). Respondents mentioned mental stress (93.3%), age (58.6%), fat (52.1%), positive family history (49.9%), smoking (42.4%), obesity (31.7%), and diabetes (30.7%) as risk factors for hypertension. Kishimoto *et al.*, discovered that excessive sweet intake, lack of exercise, and obesity were cited as risk factors for diabetes by urban Vietnamese and Japanese subjects in a study of rural and urban Vietnamese and Japanese outpatients [9]. Excessive salt consumption was the most frequently cited risk factor for hypertension by Japanese subjects, whereas obesity and alcohol consumption were cited by urban and rural Vietnamese subjects, respectively. Medical information was primarily obtained from medical personnel in both countries, but other forms of

mass media were also commonly used as sources of information. 18 (11.6%) of the 155 rural Vietnamese subjects were hypertensive, and 7 (38.9%) of these hypertensive subjects reported being aware of the risk factors for hypertension. Excessive alcohol consumption (87.1%), obesity (83.9%), and smoking (80.6%) were identified as the three major risk factors for hypertension by the rural Vietnamese subjects, and 70.3% of these people identified excessive salt intake, which ranked seventh among the 9 factors listed in the questionnaires, as a risk for hypertension. Thirty-two (22.4%) of the 147 urban Vietnamese subjects were hypertensive, and 11 (33.3%) of these hypertensive subjects reported being aware of the risk factors for hypertension. Obesity (79.6%), aging (78.9%), and excessive alcohol consumption (77.6%) were identified as the three major risk factors for hypertension by urban Vietnamese subjects. Despite the fact that 66.7% of urban Vietnamese subjects identified excessive salt consumption as a risk factor for hypertension, it was ranked eighth out of nine factors. Thirteen (12.7%) of the 102 urban Japanese subjects were hypertensive, and ten (76.9%) of these hypertensive subjects reported being aware of the risk factors for hypertension.

As hypertension complications, three-quarters mentioned heart attack, 40% mentioned heart failure, half mentioned eye problem (blindness), eighty percent mentioned stroke, and one-fourth mentioned kidney failure.

More than 90% of respondents mentioned regular intake of Drug/Medication as management for hypertension, followed by three-fourths Diet control, less than half Regular exercise (Walking at least 30 minutes a day), and 40% Diet control and exercise. According to a study conducted in Kerala (South India), only 81 (16.8%) of hypertensive patients were aware of their condition. [10] Only high salt diet ($P= 0.03$) and diabetes mellitus ($P= 0.004$) had a significant association with hypertensive state among the parameters such as dietary habits, physical activity, educational standards, salt intake, and diabetes mellitus [10]. In a Canadian study, the majority of participants were unaware of the link between hypertension and heart disease (80%), heart attack (66%), kidney disease (98%), blood vessel damage (95%), and premature death (74%). Respondents also had limited knowledge of lifestyle issues affecting hypertension, despite the fact that 44% were overweight and 18% were smokers. Despite believing that hypertension was not a serious medical condition, nearly two-thirds (63%) believed it had clearly identifiable signs or symptoms. Most respondents (59%) incorrectly believed that they would not develop hypertension, and 38% believed that if they did develop hypertension, they would be able to control it without the assistance of a physician [11]. Almost all of the respondents mentioned avoiding smoking, eating a fruit and vegetable rich but low-fat diet, and avoiding alcohol consumption as ways to prevent hypertension.

According to the respondents' knowledge level, approximately sixty percent had poor knowledge, less than thirty percent had moderate knowledge, and the remainder had satisfactory knowledge. Poor knowledge was found more among urban respondents than rural respondents, moderate level of knowledge was found more among urban respondents than rural respondents, and satisfactory level of education was found more among urban respondents than rural respondents ($p>0.05$). Poor knowledge was found in more females than males, moderate knowledge was found in more males than females, and satisfactory knowledge was found in more males than females ($p>0.05$). The widespread belief that hypertension and diabetes mellitus are diseases of the elderly may be to blame for the youth's lack of awareness. Improving community awareness is an important population-based strategy for preventing these diseases' complications [12].

CONCLUSION

The study concluded that approximately sixty percent of respondents had poor knowledge, less than thirty percent had moderate knowledge, and the remainder had satisfactory knowledge of hypertension risk factors and complications. Certain differences in the level of awareness regarding the risk factors and complications of hypertension were observed between the urban and rural populations, particularly in terms of chronological importance on symptoms, risk factors, hypertension complications, and the necessity of consulting a doctor, while almost the same was found among both urban and rural respondents regarding preventive measures and hypertension management. To improve knowledge about hypertension risk factors and complications, an awareness program should be implemented using appropriate materials that take into account the cultural and social backgrounds of both urban and rural populations. To control hypertension, a larger study in the region is required to gather such information about hypertension, as it is critical to design sound prevention and control programs, improve knowledge attitudes, and lifestyle practices early in life.

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