

# Treatment compliance of Hypertensive Patients

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## Abstract

### Key words:

Hypertension,  
Anti hypertensive  
drugs,  
Compliance.

**Background:** Hypertension is an important public-health challenge worldwide. It is important because of its high frequency and its effect on cerebrovascular, cardiovascular and kidney disease.

**Methods:** This cross-sectional descriptive study was conducted to assess the treatment compliance of hypertensive patients and medical history of patients with hypertension in the outpatient department of Cardiology, National Institute of Cardiovascular Diseases (NICVD), Dhaka. Considering inclusion and exclusion criteria, 350 hypertensive outdoor patients were included in this study. Data was analyzed by SPSS version 20.

**Results:** The study revealed that the mean age of the respondents was 50.49 years ( $SD \pm 8.449$ ). Approximately 67.2% of the respondents were suffering from hypertension from <5 years and 15.6% respondents were hospitalized three times and 12.0% respondents were hospitalized more than three times. The mean duration of taking antihypertensive medicine was 4.91 years. The study also found that 48.8% respondents were taking antihypertensive medication irregularly. The mean systolic blood pressure was 129.96 mm of Hg ( $SD \pm 23.60$ ) and diastolic blood pressure was 86.08 mm of Hg ( $SD \pm 12.76$ ).

**Conclusion:** The study results revealed that about half of the patients do not take drugs regularly, which is an alarming sign. Therefore, the instructions and counseling should be given to the patient to fulfill the treatment for prevention of complications related to hypertension.

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## Introduction:

Hypertension is an important public-health challenge worldwide.<sup>1</sup> It is one of the most important cardiovascular risk factor but its control is still a challenge all around the world. However, high blood pressure is a major cardiovascular risk factor that affects approximately 25% of the adult population in industrialized countries. In addition, the World Health Organization (WHO) has estimated that about 62% of cerebrovascular disease and 49% of ischemic heart disease burden worldwide are attributable to suboptimal blood pressure levels where by high blood pressure is estimated to cause 7.1 million deaths annually, accounting for 13% of all deaths globally.<sup>2</sup> Several studies indicate that low compliance to antihypertensive drugs affects blood pressure control.<sup>3</sup>

Numerous studies found that high adherers had a significantly lower risk of cardiovascular events in comparison with low adherers.<sup>4</sup> The impact of

adherence on blood pressure control has been challenged. Uncontrolled hypertension is caused by non adherence to the antihypertensive drugs.<sup>c</sup> WHO described poor compliance as the most important cause of uncontrolled blood pressure and estimates that 50–70% of people do not take their antihypertensive medication as prescribed.<sup>6</sup> However, control of blood pressure can reduce cardiovascular morbidity and mortality, therefore the compliance to antihypertensive drugs and life style modification play an important role for the control of hypertension.<sup>7</sup> Up to three-quarters of the world's hypertensive population will be in economically developing countries by the year 2025.<sup>8</sup>

Hypertension is an important condition among adults, affecting nearly one billion people worldwide. However, compliance with treatment is often sub-optimal, especially in developing countries.<sup>9</sup> Over the last few years, there have been important advances in our understanding of

the nature and management of patient compliance in hypertension.<sup>10</sup> Medical non-compliance has been identified as a major public health problem in the treatment of hypertension.

According to WHO reports hypertension kills nearly 1.5 million in Southeast Asia and afflicts 12 million in Bangladesh, making it the single-most important risk factor for non-communicable diseases like heart attack and stroke. However, study has found that one-third adults in Bangladesh never measured blood pressure in their lifetime. In addition, a survey reports has showed that 12 million or 18 percent of Bangladesh adults aged 25 years or above have high blood pressure, with at least half of them are at risk of grave consequences.<sup>11</sup> There is a large research record focusing on the understanding of this phenomenon. However, the majority of studies in this field have been focused from the medical care perspective, but few studies have focused on the patients' point of view. The objectives of the study were to determine the treatment compliance of hypertensive patients and to assess medical history of patients with hypertension.

#### Methods:

A cross-sectional descriptive study was conducted from June 2014 to December 2014 with hypertensive patients at outpatients department of National Institute of Cardiovascular Diseases (NICVD) in Dhaka, Bangladesh. The Sampling technique method of study was non-probability convenient sampling technique. A total 350 patients were included in this study with age between 30 to 60 years. Sample was selected who were available and interest in interview. The study population was comprised both male and female hypertensive patients who were diagnosed and receiving treatment for hypertension with related disease and attended in outpatient department in the NICVD was included in study population.

Data was collected by face to face interview by asking respondents questions as per the written semi structured questionnaire. The interview was conducted at the outpatient departments. Prior to original data collection, a pre-test session was conducted among 15 cases in places other than original data collection site. Minor modification which came out after pre-testing was incorporated in the main interview session. Data collection was

carried out for six months. A software package of SPSS (version 20) was used to analyze data. Descriptive statistics was used for all variables. Values were expressed as percentage and mean.

#### Results:

This study was conducted with the aims to determine the treatment compliance of hypertensive patients, to assess medical history of hypertensive patients and to assess the socio-demographic characteristics of the hypertensive patients. The study revealed that more than half of the respondents 71.6 % were male and 28.4% were female (Table-I). The mean age of the respondents was 50.49 years ( $\pm$ SD 8.45). The study was found that the majority 56.8% of the respondents were 51-60 years age group, 23.6% respondents were 41-50 years age group and 19.6 % respondents were 31-40 years age group. The majority of the respondents 91.6% were married, and 6.8% were single, and 1.6% respondents were divorced. The study was observed that highest number 28.8% respondents had primary level education, 21.6% had secondary level education, 14.4 had higher secondary level education and 16.8% respondents had degree/ master level education and 18.4% were illiterate. The study found that among the total respondents, the majority 25.6% were involved in businessman and 20.4% were involved in non-government service. Followed by 20%, were house wife, 9.6% were farmer, 17.2% were governmental service, and 7.2% were daily labourer. The more than half 54.8% were living in urban and 45.2% were live in rural.

The mean duration of hypertension was 4.91 years ( $SD\pm 4.03$ ). Among the total respondents the majority 67.2% was suffering from hypertension between d"5 years. However, 21.6% between 6-10 years, 9.2% between 11-15 years, 2.0% respondents were suffering from hypertension >15 years (Table-II). The mean systolic blood pressure was 129.96 mm of Hg with  $SD\pm 23.60$  and mean diastolic blood pressure was 86.08 mm of Hg with  $SD\pm 12.76$ .

The study revealed that the majority of the respondents 42.8% were hospitalized in one time and 29.6% were hospitalized in two times. On the other hand, 15.6% respondents were hospitalized in three times and 12.0% were hospitalized in more than three times (Table-II).

**Table-I***Demographic characteristic of the respondents (n=350).*

Demographic characteristics	Frequency (n)	Percentage (%)
Gender		
Male	250	71.6
Female	100	28.4
The mean age was 50.49 years and SD $\pm$ 8.45		
31-40	69	19.6
41-50	83	23.6
51-60	198	56.8
Marital status		
Married	331	91.6
Single	24	6.8
Divorced	5	1
Education level		
Illiterate	64	18.4
Primary	101	28.8
Secondary	75	21.6
Higher Secondary	49	14.4
Degree/ Master degree	59	16.8
Residence		
Urban	198	54.8
Rural	158	45.2
Occupation		
Business	89	25.6
Daily labourer	25	7.2
Farmer	34	9.6
Government Service	61	17.2
Non-government Service	72	20.4
House Wife	70	20.0

The mean duration of antihypertensive medication was 4.91 years (SD  $\pm$  4.03). Among the total respondents the majority 67.2% was taking antihypertensive medicine  $\leq$  5 years. However, 21.6% between 6-10 years, 23(9.2%) between 11-15 years, only 2.0% respondents were taking antihypertensive medicine  $>$ 15 years. The results revealed that near half of the respondents do not take antihypertensive medicine regularly. It was found that 51.2% of the respondents had not taken medicine regularly and 48.8% taken medicine regularly.

**Table II***Medical History of the Respondents (n = 350).*

Duration of hypertension	Frequency	Percentage
Mean duration was 4.91 years and SD $\pm$ 4.03.		
< 5 yrs.	235	67.2
6-10 yrs.	76	21.6
11-15	32	9.2
>15 yrs.	7	2
History of hospitalization		
First time	150	42.8
Two times	103	29.6
Three times	55	15.6
More than three times	42	12.0
Anti-hypertensive Medication		
<i>The mean duration was 4.91 years, SD<math>\pm</math> 4.03.</i>		
< 5 yrs.	232	67.2
6-10 yrs.	74	21.6
11-15 yrs.	38	11.2
> 15 yrs.	6	2.0

It was observed that 48.8% of the respondents had taken medicine irregularly. Among them the majority of the respondents 15.8 % had not taken medicine due to high cost, 24.8% forget to take medicine and 8.8% respondents had perceived medication is unable to improve blood pressure (Table-III).

**Table-III***Treatment Compliance of Respondents (n=350).*

Compliance of antihypertensive of medication	Frequency	Percentage
Yes	179	51.2
No	171	48.8
Reasons of irregular medicine		
High cost of medicine	43	15.2
Disremember	87	24.8
No improve BP	30	8.8

**Discussion:**

The mean age of respondents was 50.49 years. Male female accounted for 71.6% and 28.4% of the respondents, respectively. The majority of respondents (91.6%) were married, 28.8% had primary level of education and (25.6%) were businessman. The study findings are consistence with the study conducted by Ambaw, et al.<sup>12</sup> They

found that the mean age of respondents was 56.9 years with a standard deviation of 12.8. More than three fourth (76.6%) of the respondents were urban by resident. Two hundred thirty three (60.7%) reported to be married and (24.2%) were merchants. Additionally, Mahmood et al. found that the socio-demographic characteristics risk factors of hypertension and age found as a significant predictor of hypertension in the study population. (33.3%), upper-middle (55.5%) and the middle classes (48.0%), as compared to that among the lower-middle (41.8%) and the lower (45.4%) classes.<sup>13</sup>

Regarding Medical history, the study found that more than half (67.2%) of the respondents were suffering from hypertension  $\leq 5$  years and 21.6% of the respondents were suffering from hypertension 6-10 years. Near half (42.8%) of the respondents were admitted in hospital one time. Regarding the medication information, (67.2%) of the respondents have been taking medicine 1-5 years, while (21.6%) of the respondents have been taking medicine 6-10 years, 23 (9.2%) of the respondents have been taking medicine 11-16 years, and only (2.0%) of the respondents have been taking medicine  $>15$  years. Ambaw, et al. found that (35.2%) of the respondents have been taking their treatment for the last 2 to 4 years.<sup>12</sup> The mean systolic blood pressure was 129.96 mm of Hg with SD  $\pm 23.60$  and mean diastolic blood pressure was 86.08 mm of Hg with SD  $\pm 12.76$ . This study results was inconsistency with Ambaw, et al. They found More than half (53.4%) of the study subjects had uncontrolled blood pressure.<sup>12</sup>

Regarding compliance of antihypertensive of medication, it was found that 48.8% of the respondents had taken medicine irregularly. Among them the majority of the respondents 15.8 % had not taken medicine due to high cost, 24.8% forget to take medicine and 8.8% respondents had perceived medication is unable to improve blood pressure. Hashmi et al. conducted a study in Pakistan they Found the overall level of awareness about hypertension and its treatment was very low. 24% of the study sample took their medication only when they thought they had symptoms of high blood pressure.<sup>14</sup> This patient group had very low adherence. The patients who considered every dose to affect blood pressure had significantly higher adherence (P, 0.001) and lower systolic and diastolic

blood pressures. A very small proportion of patients were aware of the risk factors for hypertension and an even smaller proportion knew about the complications. Greater awareness was associated with higher adherence.

### Conclusion:

Treatment noncompliance was very high among the outdoor hypertensive patients of NICVD. This study projects the need for counseling; education about treatment and awareness about the complications of hypertension among the hypertensive patients and general people. It can be facilitated at the hospital as well as at the community levels.

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### Conflict of Interest - None.

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