

Life Style Pattern Among Adult Hypertensive Patients-An Observational Study

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Background: High blood pressure is a significant preventable factor in cardiovascular illness and death, with its prevalence rising among elderly individuals. Lifestyle changes are crucial for managing blood pressure, yet information on lifestyle habits among hypertensive individuals in Bangladesh is still scarce. This research sought to evaluate lifestyle habits in adult patients with hypertension and pinpoint adjustable factors for better management of high blood pressure. **Methods:** An observational study based in a hospital was carried out involving 120 adult patients with hypertension at the Department of Cardiology, BMU, Dhaka, during January to June 2026. Information regarding sociodemographic elements, lifestyle patterns, clinical features, and comorbid conditions was gathered through interviews and health records. Blood pressure and BMI were evaluated using conventional techniques. Data analysis was conducted using SPSS version 26.0, and a p-value of less than 0.05 was regarded as statistically significant. Approval for ethical considerations and informed consent were acquired. **Results:** In a study involving 120 hypertensive individuals, the average age was 56.4 ± 11.7 years; the majority were females aged 51–60 years, lived in urban areas, had hypertension for 5 years or more, and were receiving treatment. The most prevalent unhealthy behaviors were low physical activity (63.3%), high salt consumption (56.7%), and insufficient fruit/vegetable intake (51.7%). Overweight/obesity impacted 67.5%, while 45.8% experienced uncontrolled hypertension. Lack of physical activity and increased BMI were notably linked to uncontrolled blood pressure. **Conclusion:** Unhealthy habits and excess weight/obesity are prevalent among patients with hypertension. Diet, physical activity, weight

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management, and adherence through lifestyle changes are crucial for improving blood pressure management and reducing cardiovascular risk.

Keywords: Hypertension, Lifestyle modification, Physical activity, Dietary habits, Obesity, Blood pressure control.

INTRODUCTION:

Blood pressure (BP) refers to the pressure applied by circulating blood on the walls of arteries, represented as systolic over diastolic pressure. Hypertension is identified when systolic blood pressure is ≥ 140 mmHg and/or diastolic

blood pressure is ≥ 90 mmHg in two different readings [1,2]. High blood pressure is a significant modifiable risk factor for heart disease and early death. Its occurrence rises consistently with age, and over half of people aged 60–69 years are impacted by hypertension [3].

Hypertension continues to pose a significant worldwide health issue, leading to around 10 million fatalities and 200 million years of healthy life lost every year [4]. It is responsible for about 54% of stroke occurrences and 47% of coronary artery disease instances. It significantly raises the likelihood of coronary heart disease and stroke, especially in those with diabetes. Since hypertension is frequently without symptoms, almost 50% of those affected do not realize they have the condition [5,6].

Lifestyle changes are the primary approach for managing newly diagnosed hypertension. Approaches like the DASH diet, consistent aerobic activity, weight reduction, quitting smoking, and decreased alcohol consumption effectively decrease blood pressure, although direct evidence for minimizing cardiovascular disease risk is still quite limited [7,8]. Lifestyle changes (LSM) may lower systolic blood pressure by as much as 11 mmHg, greatly enhancing blood pressure management. In patients with strong adherence, it might enable a reduction or complete cessation of antihypertensive medication once sufficient control is attained [9]. Factors related to lifestyle and diet are changeable and are essential in preventing and controlling hypertension. Since these risk factors frequently

group together and have combined effects, it is crucial to assess various lifestyle habits for effective blood pressure management and lowering cardiovascular risk [10-12].

Worldwide, recent research shows that following healthy lifestyle habits enhances blood pressure regulation, while different lifestyle and metabolic trends in hypertensive individuals underscore the necessity for personalized lifestyle strategies to improve hypertension treatment [4,12]. In Bangladesh, recent evidence indicates that hypertension prevalence remains high and continues to increase, while better knowledge of healthy lifestyle practices is associated with earlier hypertension diagnosis and improved opportunities for timely management and prevention of complications [13,14].

Although hypertension is a significant and growing concern in Bangladesh, there is limited information on lifestyle habits among adult patients with high blood pressure. This study sought to examine lifestyle patterns in adult hypertensive patients to pinpoint changeable behaviors that could enhance blood pressure regulation and lower cardiovascular risk.

METHODOLOGY

Study Design and Setting

This hospital-based observational study was conducted in the Department of Cardiology, Bangladesh Medical University (BMU), Dhaka, Bangladesh, over a six-month period from January 2026 to June 2026. The study was designed to assess the lifestyle patterns among adult patients with hypertension attending the outpatient and inpatient services of the department.

Study Population

Adult patients aged 18 years and above with a confirmed diagnosis of hypertension, based on the 2023 European Society of Hypertension (ESH) Guidelines, were considered eligible for inclusion [15]. A total of 120 consecutive patients fulfilling the eligibility criteria were enrolled using a consecutive sampling technique.

Eligibility Criteria

Inclusion Criteria

- Adults aged 18 years or older.
- Patients with previously diagnosed or newly diagnosed hypertension.
- Patients receiving follow-up or treatment at the Department of Cardiology.
- Patients who provided written informed consent.

Exclusion Criteria

- Pregnant women with gestational hypertension or pre-eclampsia.
- Patients with severe acute illness requiring emergency management.
- Patients with cognitive impairment or psychiatric illness that interfered with questionnaire completion.
- Patients with incomplete clinical information or who declined to participate.

Data Collection Procedure

After obtaining written informed consent, data were collected through face-to-face interviews using a pretested structured questionnaire and review of medical records. Information regarding sociodemographic characteristics, duration of hypertension, medication use, smoking status, dietary habits, salt intake, physical activity, fruit and vegetable consumption, sleep duration, and perceived psychological stress was obtained. Anthropometric measurements, including height and weight, were recorded to calculate body mass index (BMI). Blood pressure was measured using a calibrated digital sphygmomanometer after the participant had rested for at least five minutes in

the seated position. Two measurements were taken five minutes apart, and the average value was used for analysis. Blood pressure was categorized as controlled ($<140/90$ mmHg) or uncontrolled ($\geq 140/90$ mmHg) based on the average recorded values. Information on comorbidities, including diabetes mellitus, dyslipidemia, and chronic kidney disease, was obtained from patients' medical records.

Statistical Analysis

Data were entered, cleaned, and analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation (SD), while categorical variables were presented as frequencies and percentages. Associations between categorical variables were assessed using the Chi-square test or Fisher's exact test, as appropriate. A two-tailed p-value <0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board (IRB)/Ethical Review Committee of Bangladesh Medical University (BMU), Dhaka, Bangladesh, before the commencement of the study. Written informed consent was obtained from all participants prior to enrollment.

RESULTS

Table 1 shows total of 120 adult patients with hypertension were enrolled in the study. The mean age of the participants was 56.4 ± 11.7 years (range: 31–82 years). The highest proportion of patients (35.8%) belonged to the 51–60 years age group, followed by 61–70 years (27.5%). Females constituted 55.0% of the study population. More than half of the participants (58.3%) resided in urban areas. Nearly two-thirds (64.2%) had been living with hypertension for five years or more, and 71.7% were receiving antihypertensive medication.

Table 1. Sociodemographic Characteristics and Hypertension Profile (N = 120)

Variable	Frequency (n)	Percentage (%)
Age group (years)		
30–40	10	8.3
41–50	24	20.0
51–60	43	35.8
61–70	33	27.5
>70	10	8.3
Mean $\pm$ SD	56.4 $\pm$ 11.7	–
Range	31–82	–
Sex		
Male	54	45.0
Female	66	55.0
Residence		
Urban	70	58.3
Rural	50	41.7
Duration of hypertension		
<5 years	43	35.8
$\geq$ 5 years	77	64.2
Current antihypertensive medication		
Yes	86	71.7
No/Irregular	34	28.3

Figure I present low physical activity was the most common unhealthy lifestyle behavior (63.3%), followed by high dietary salt intake (56.7%), inadequate fruit and vegetable consumption (51.7%), poor medication adherence (30.8%), current smoking (26.7%), and regular alcohol consumption (8.3%).

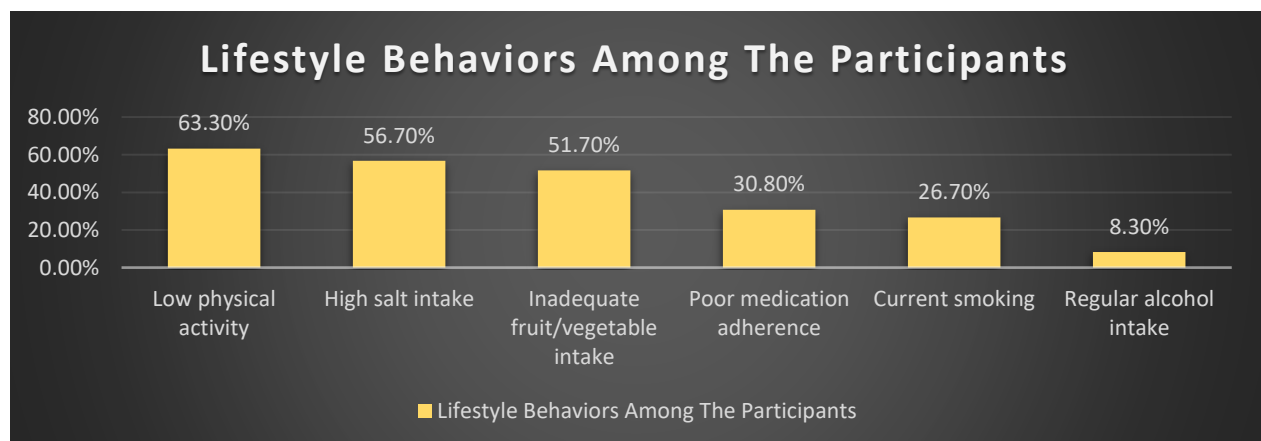


Figure legend: Distribution of lifestyle behaviors among adult hypertensive patients (N = 120). Multiple responses were allowed; therefore, percentages do not total 100%.

Figure I: Distribution of Lifestyle Behaviors Among Adult Hypertensive Patients (N = 120)

Table 2 shows the anthropometric and clinical characteristics. Overweight and obesity were observed in 40.0% and 27.5% of participants, respectively. Uncontrolled blood pressure ($\geq 140/90$ mmHg) was present in 45.8% of patients. Diabetes mellitus and dyslipidemia were documented in 31.7% and 28.3% of participants, respectively.

Table 2. Anthropometric and Clinical Characteristics (N = 120)

Variable	Frequency (n)	Percentage (%)
BMI		
Normal	39	32.5
Overweight	48	40.0
Obese	33	27.5
Blood pressure control		
Controlled ($<140/90$ mmHg)	65	54.2
Uncontrolled ($\geq 140/90$ mmHg)	55	45.8
Comorbidities*		
Diabetes mellitus	38	31.7
Dyslipidemia	34	28.3
Chronic kidney disease	9	7.5

*Multiple responses were allowed; therefore, percentages do not total 100%.

Table 3 presents the detailed lifestyle patterns of the study participants. Only 35.8% of patients performed at least 150 minutes of moderate physical activity per week, while 64.2% were physically inactive. Daily consumption of fruits and vegetables was reported by 40.8% of participants, whereas 59.2% consumed them less than five days per week. Nearly half (47.5%) of the participants added extra salt to meals, and 42.5% reported consuming fried or fast foods at least three times per week. Adequate sleep (7–8 hours per night) was reported by 55.8%, while 37.5% experienced high levels of perceived psychological stress.

Table 3. Lifestyle Pattern of Adult Hypertensive Patients (N = 120)

Variable	Frequency (n)	Percentage (%)
Physical activity		
≥ 150 min/week	43	35.8
<150 min/week	77	64.2
Fruit and vegetable intake		
≥ 5 days/week	49	40.8
<5 days/week	71	59.2
Extra salt intake with meals		

Yes	57	47.5
No	63	52.5
Fried/Fast food consumption		
≥3 times/week	51	42.5
<3 times/week	69	57.5
Sleep duration		
7–8 hours/day	67	55.8
<7 or >8 hours/day	53	44.2
Perceived psychological stress		
High	45	37.5
Low/Moderate	75	62.5

Table 4 shows uncontrolled hypertension was significantly more common among patients performing <150 minutes of physical activity per week than among those meeting the recommended activity level (57.1% vs. 25.6%, $p = 0.001$).

Table 4. Association Between Physical Activity and Blood Pressure Control (N = 120)

Physical activity	Controlled BP n (%)	Uncontrolled BP n (%)	Total	p-value
≥150 min/week (n = 43)	32 (74.4)	11 (25.6)	43	
<150 min/week (n = 77)	33 (42.9)	44 (57.1)	77	0.001

Chi-square test. Bold values indicate statistical significance ($p < 0.05$).

Table 5 shows the association between body mass index and blood pressure control. Patients who were overweight or obese had a significantly higher prevalence of uncontrolled hypertension compared with those having a normal BMI (53.1% vs. 29.5%, $p = 0.018$).

Table 5. Association Between Body Mass Index and Blood Pressure Control (N = 120)

BMI category	Controlled BP n (%)	Uncontrolled BP n (%)	Total	p-value
Normal (n = 39)	27 (69.2)	12 (30.8)	39	
Overweight/Obese (n = 81)	38 (46.9)	43 (53.1)	81	0.018

Chi-square test. Bold values indicate statistical significance ($p < 0.05$).

DISCUSSION:

The current study revealed that hypertension was most prevalent in adults aged 51–60 years, exhibiting a slight predominance among females and those living in urban areas. The majority of participants had hypertension for at least five years and were on antihypertensive medication, indicating the chronic aspect of the condition. These results align with a systematic review from

Bangladesh indicating an overall hypertension prevalence of 20%, showing increased rates among older individuals, women, and urban residents, emphasizing the rising burden of hypertension within the nation [13].

This study identified that insufficient physical activity, excessive salt consumption, and low intake of fruits and vegetables were the prevalent unhealthy lifestyle habits. These results align with

a national survey from Bangladesh that pinpointed physical inactivity, poor diet, and tobacco consumption as significant modifiable risk factors leading to the rising rates of hypertension, highlighting the necessity of lifestyle changes for successful blood pressure management [16].

In this study found that 67.5% of the participants were either overweight or obese, 45.8% experienced uncontrolled blood pressure, 31.7% had diabetes mellitus, and 28.3% were affected by dyslipidemia. These results align with a study from Bangladesh that noted a significant coexistence of hypertension and diabetes, especially in overweight and obese individuals, emphasizing the considerable burden of cardiometabolic comorbidities and the necessity for comprehensive risk factor management [17].

The current study discovered significant levels of physical inactivity, unhealthy eating habits, and high salt consumption among patients with hypertension. Likewise, a recent study from Bangladesh indicated that while 91.9% acknowledged the dangers of excessive salt intake and 66.6% noted obesity as a risk factor, only a small number sought health information via TV (10.3%) or newspapers (4.2%), underscoring the necessity for enhanced lifestyle education to better manage hypertension [14].

This study revealed a significant link between physical inactivity and uncontrolled

hypertension. Likewise, a study in Bangladesh found that increased physical activity correlates with reduced blood pressure and better hypertension control, emphasizing the significance of consistent exercise in managing hypertension [18].

The current study indicated that patients who are overweight or obese had a higher likelihood of experiencing uncontrolled hypertension. A South Asian study similarly found that increased BMI was significantly linked to hypertension, highlighting the importance of managing weight for controlling blood pressure [19].

In summary, poor lifestyle habits, obesity, and cardiometabolic conditions are prevalent in hypertensive individuals, emphasizing the importance of specific lifestyle changes to enhance blood pressure management and lower cardiovascular risk.

CONCLUSION:

Poor lifestyle choices, excess weight/obesity, and insufficient blood pressure management are common in adult patients with hypertension. The results underscore the significance of all-encompassing lifestyle change approaches, such as consistent exercise, lower salt consumption, better eating habits, weight control, and enhanced adherence to treatment. Enhancing patient education and behavioral strategies could lead to improved blood pressure management and lower the long-term risk of cardiovascular issues.

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