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Original Article

Patient Perspectives on Hypertension: A Cross-Sectional Survey of Knowledge, Risk Perceptions and Lifestyle Behaviors

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Abstract

Background: *Cardiovascular diseases are the leading global cause of death, with hypertension as a major preventable risk factor. Limited knowledge and awareness among hypertensive patients contribute to poor disease control. Understanding patients' knowledge and attitudes toward cardiovascular risk factors is essential for effective management. The objective of this study is to assess hypertensive patients' knowledge, risk perceptions, and lifestyle behaviors related to cardiovascular risk, and to identify areas for improved management.* ***Materials and Methods:*** *This cross-sectional study was conducted at Eastern Medical College & Hospital, Cumilla, from July 2023 to June 2024 with 128 hypertensive patients. Data was collected through face-to-face interviews using a pretested structured questionnaire that assessed demographics, knowledge, attitudes, and lifestyle behaviors related to hypertension. Adults aged 20-70 years were included by convenient sampling techniques. Data were analyzed using SPSS v23.0. Ethical approval was obtained, and informed written consent, confidentiality, and voluntary participation were ensured.* ***Results:*** *Among 128 hypertensive patients (mean age 54.3±12.1 years; 54.7% male), awareness of major cardiovascular risk factors was high, particularly for hypertension (89.8%) and diabetes (70.3%). Most patients had positive attitudes toward lifestyle modification, especially medication adherence (95.3%), though adherence to diet, exercise, and smoking cessation was lower (31.3-70.3%). Physicians were the main source of information (79.7%). Key barriers to lifestyle change included lack of motivation (43.8%), time constraints (34.4%), and financial limitations (29.7%).* ***Conclusion:*** *Hypertensive patients showed good knowledge and positive attitudes toward lifestyle modification, yet adherence to diet, exercise, and medication remained suboptimal, indicating inconsistency between awareness and actual self-management.*

Keywords: Hypertension, Patient Knowledge, Risk Perception, Lifestyle Behaviors, Medication Adherence, Cardiovascular Risk, Health Education.
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Introduction

Hypertension (HTN) is a significant global health concern, impacting a large proportion of the adult population. The rising incidence of HTN is strongly linked to rapid urbanization and lifestyle changes, including unhealthy diets, physical inactivity, excessive alcohol consumption, and smoking[1]. HTN affects an estimated 1.28 billion adults worldwide, with a large proportion remaining undiagnosed or inadequately managed. It is one of the leading yet preventable contributors to cardiovascular diseases (CVD)[2]. Despite the availability of effective treatment options, poor knowledge of cardiovascular risk factors and limited awareness among hypertensive patients remain significant obstacles to disease control[3]. Understanding how patients perceive their illness and associated risk factors is essential, as education and awareness play a vital role in effective hypertension management and in preventing cardiovascular complications[4]. Patients who possess better knowledge of CVD risk factors are more likely to adopt healthy behaviors, maintain lifestyle modifications, and adhere to prescribed antihypertensive medications, ultimately improving their blood pressure control[5]. Unfortunately, such levels of awareness are not universal. In many low- and middle-income countries, gaps in knowledge are common due to health literacy barriers and restricted access to healthcare services[6]. This situation highlights the importance of exploring patients' attitudes and beliefs, as they often influence treatment-seeking behavior and adherence patterns. Tertiary care hospitals are suitable places for such investigations, as they manage complex and high-risk hypertension cases and serve as referral centers for patients from diverse backgrounds[7]. By evaluating what hypertensive patients know and how they feel about cardiovascular risk factors, healthcare providers can

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design targeted strategies that address patients' needs more effectively[8]. Previous investigations have revealed widespread misconceptions regarding dietary salt intake, physical inactivity, and medication adherence, which further worsen cardiovascular risk profiles in this population[9,10]. Additionally, knowledge and attitudes are shaped by sociodemographic variables such as age, education, and socioeconomic status[11]. Studies suggest that younger and more educated patients typically exhibit better understanding, while older and socioeconomically disadvantaged individuals demonstrate limited awareness[12].

Cultural values and traditional health practices also influence patients' attitudes toward hypertension and its treatment, sometimes creating barriers to evidence-based care[13]. Considering the rising burden of hypertension and its complications, it is essential to not only assess but also understand patients' knowledge and attitudes regarding cardiovascular risk factors[14]. Such understanding can provide evidence for interventions that improve awareness, empower patients, and strengthen public health policies[15]. This study aims to assess patients' knowledge, risk perceptions, lifestyle behaviors, and cardiovascular risk related to hypertension in order to identify gaps and guide effective management strategies.

Materials and Methods

Study Design: This was a cross-sectional observational study conducted at Eastern Medical College & Hospital, Cumilla, among hypertensive patients in medicine and cardiology departments. The study period was from July 2023 to June 2024. The primary objective was to assess patients' knowledge and attitudes regarding cardiovascular risk factors.

Sample size: The sample size was calculated using the formula $n = Z^2pq/d^2$, taking a prevalence of 70%[16], a 10% allowable error, and Z = 1.96, yielding a required sample size of 81 participants. 20% non-response rate was 17. So, total sample was 81+17=98. However, a total of 128 samples were included for better precision by convenient sampling technique.

Data Collection Procedure: Data was collected through face-to-face interviews using a pre-tested structured questionnaire. The questionnaire included sections on sociodemographic details, knowledge, attitudes toward lifestyle modifications, behavioral practices and cardiovascular risk related to hypertension factors. Interviews were conducted in Bengali, and all participants gave informed written consent prior to participation. Data collection was carried out by trained medical interns under close supervision.

Inclusion Criteria: Patients diagnosed with hypertension, age 20-70 years, attending the out-or inpatient departments of medicine and cardiology in Eastern Medical College & Hospital during the study period and who gave informed consent.

Exclusion Criteria: Critically ill patients, diagnosed with cognitive or psychiatric disorders, pregnant hypertensive women and who refused to participate.

Statistical Analysis: Collected data was entered into Microsoft Excel and analyzed using SPSS version 25.0. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize the data. Cross-tabulations were performed to observe patterns in knowledge and attitudes among different subgroups. Results were presented in tables and figures with narrative descriptions.

Ethical Consideration: Ethical clearance for the study was obtained from the Institutional Ethical Review Board of Eastern Medical College. Informed written consent was received from all participants. Confidentiality and anonymity of the data were strictly maintained. Participation was voluntary, and patients had the right to withdraw at any stage without any consequences.

Table-I: Demographic characteristics of hypertensive patients (n=128)

Variable	Category	Frequency (n)	Percentage (%)
Age group (years)	<40	24	18.8
	40-59	62	48.4
	≥60	42	32.8
Age (years)	Mean ± SD	54.3 ± 12.1	
Gender	Male	70	54.7
	Female	58	45.3
Occupation	Employed	48	37.5
	Unemployed	20	15.6
	Retired	32	25.0
	Homemaker	28	21.9

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Results

Table-I shows the mean age of the study cases was 54.3±12.1 years. Regarding age distribution, 24 patients (18.8%) were younger than 40 years, 62 patients (48.4%) were between 40 and 59 years, and 42 patients (32.8%) were aged 60 years or above. In terms of gender, 70 patients (54.7%) were male, and 58 patients (45.3%) were female. Occupational status showed that 48 patients (37.5%) were employed, 20 (15.6%) were unemployed, 32 (25.0%) were retired, and 28 patients (21.9%) were homemakers.

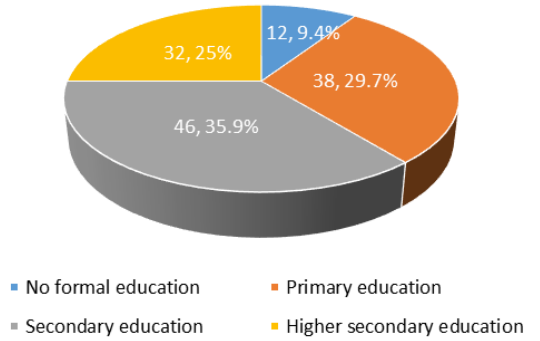

Figure-1: Educational Level of Patients (n=128)

Educational levels varied among participants. Only 12 patients (9.4%) had no formal education. A larger proportion, 38 patients (29.7%), completed primary education, while 46 patients (35.9%) had secondary education. Notably, 32 patients (25.0%) had attained higher education.

Table-II: Duration of the diagnosis of hypertension (n=128)

Duration	Frequency (n)	Percentage (%)
<1 year	30	23.4
1-5 years	58	45.3
>5 years	40	31.3

Regarding the duration of hypertension, 30 patients (23.4%) were diagnosed within one year. The largest group, 58 patients (45.3%), lived with hypertension for 1-5 years, while 40 patients (31.3%) reported having the condition for more than 5 years (Table-II).

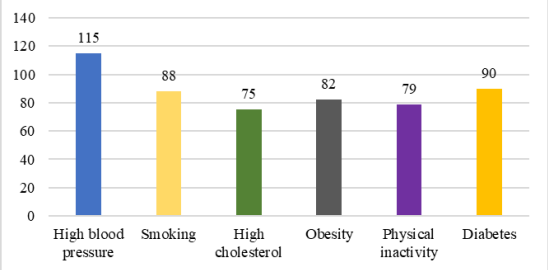

Figure-2: Patients' knowledge about major cardiovascular risk factors

Most patients demonstrated good awareness of major risk factors. Hypertension was correctly identified as a major risk factor by 115 patients (89.8%). Knowledge about diabetes was also high (90 patients, 70.3%). Smoking was reported by 88 patients (68.8%), obesity by 82 patients (64.1%), and physical inactivity by 79 patients (61.7%). Knowledge was comparatively lower for high cholesterol, with 75 patients (58.6%) correctly identifying it as a risk factor.

Table-III: Patients' Attitudes toward lifestyle behaviors related to hypertension

Attitude Statement	Agree (n)	Agree (%)
Reducing salt intake	110	85.9
Regular physical activity	112	87.5
Smoking cessation	105	82.0
Weight control	108	84.4
Medication adherence is necessary despite lifestyle changes	122	95.3

Table-III presents patients' attitudes toward lifestyle modification. The majority agreed on the importance of various measures: 110 patients (85.9%) supported reducing salt intake, 112 (87.5%) endorsed regular physical activity, 105 (82.0%) agreed on smoking cessation, and 108 (84.4%) emphasized weight control. The highest level of agreement was observed for medication adherence, with 122 patients (95.3%) acknowledging its necessity even when lifestyle changes are adopted.

Table-IV: Source of information about cardiovascular risk factors

Source of Information	Frequency (n)	Percentage (%)
Physician / Healthcare Provider	102	79.7
Media (TV, Radio, Internet)	68	53.1
Family/ Friends	45	35.2
Printed Materials (pamphlets, brochures)	40	31.3

Table-IV shows the physicians and healthcare providers were the primary source of information for most of the patients 79.7%. Media sources such as TV, radio, and the internet were reported by 53.1%. Family and friends served as information sources for 35.2%, while printed materials like pamphlets or brochures were used by 31.3%.

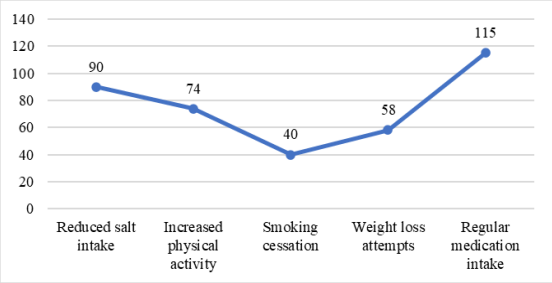

Figure-3: Patients' self-reported behavioral changes after diagnosis

Figure-3 illustrates patients' adherence to treatment following diagnosis. Most patients, 115 (89.8%), reported regular medication use. In contrast, lifestyle modifications were less consistently followed: 90 patients (70.3%) reduced salt intake, 74 (57.8%) increased physical activity, 58 (45.3%) attempted weight loss, and 40 (31.3%) quit smoking.

Table-V: Barriers to adopting healthy lifestyle

Barrier	Frequency (n)	Percentage (%)
Lack of motivation	56	43.8
Time constraints	44	34.4
Financial constraints	38	29.7
Lack of family support	30	23.4
Lack of knowledge about benefits	25	19.5

Table-V shows patients identified several barriers to adopting a healthy lifestyle. The most common barrier was lack of motivation, reported by 56 patients (43.8%). Time constraints affected 44 patients (34.4%), financial constraints 38 patients (29.7%), lack of family support 30 patients (23.4%), and lack of knowledge about benefits was a barrier for 25 patients (19.5%).

Discussion

This study offers valuable insights into patients' knowledge, risk perceptions, and lifestyle behaviors related to hypertension, underscoring both strengths and deficiencies that have important implications for clinical practice and public health strategies. The mean age of participants was 54.3±12.1 years, with the majority (48.4%) falling within the 40-59 age group. This demographic distribution aligns with previous studies indicating that hypertension prevalence increases with age, particularly in middle-aged and older adults[17]. The gender distribution (54.7% male, 45.3% female) is consistent with global trends where hypertension is more prevalent in men, though postmenopausal women also exhibit increased risk[18]. Our findings indicate that most patients (89.8%) correctly identified hypertension as a major cardiovascular risk factor. Similarly, 70.3% recognized diabetes as a risk factor, while awareness of smoking (68.8%), obesity (64.1%), and physical inactivity (61.7%) was relatively lower. These results are comparable to a study by Al-Haddad et al. (2018), where 85% of hypertensive patients acknowledged hypertension as a risk factor, but only 60% were aware of the role of dyslipidemia[19].

The lower awareness of high cholesterol (58.6%) in this study suggests a need for targeted education on lipid management, as poor control of cholesterol significantly increases cardiovascular morbidity[20]. A positive attitude toward lifestyle changes was observed, with 85.9% agreeing on salt reduction, 87.5% on physical activity, and 82.0% on smoking cessation. Notably, 95.3% believed medication adherence was essential despite lifestyle modifications. These findings are consistent with a study by Almas et al. (2019), where 88% of hypertensive patients acknowledged the importance of medication adherence, though actual compliance rates were lower[21]. This discrepancy between attitude and practice highlights the need for behavioral interventions to bridge the intention-action gap[22]. Physicians were the primary information source (79.7%), followed by media (53.1%) and family/friends (35.2%). This underscores the critical role of healthcare providers in patient education, as observed in a study by Kayima et al. (2017), where doctor-patient interactions significantly improved hypertension knowledge[23]. Despite high awareness, only 70.3% reduced salt intake, 57.8% increased physical activity, and 31.3% quit smoking, indicating that knowledge does not always translate into action. Similar findings were reported by Geldsetzer et al. (2019), where only 50% of patients with hypertension adhered to recommended lifestyle changes[24].

In this study, the most frequently reported barriers to adopting lifestyle modifications were lack of motivation (43.8%), time constraints (34.4%), and financial limitations (29.7%). These barriers reflect the multifactorial challenges patients face in sustaining long-term behavioral changes. Similar findings were reported by Khatib et al. (2016), where socioeconomic constraints and perceived inconvenience emerged as major obstacles to adherence with recommended lifestyle practices[25]. Such evidence emphasizes the importance of designing tailored interventions that address both individual and structural barriers. Strategies may include community-based support programs to enhance motivation, workplace initiatives to overcome time-related challenges, and policies that promote affordable healthcare access to reduce the financial burden on patients[26].

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Limitations of the study

This study has certain limitations. Its cross-sectional design limits causal inferences, and being conducted in a single tertiary care hospital, the findings may not be generalized to patients in other settings, particularly rural or primary care populations.

Conclusion and Recommendations

This cross-sectional survey demonstrates that although hypertensive patients generally possess adequate knowledge of cardiovascular risk factors and hold positive attitudes toward lifestyle modification, this awareness does not consistently translate into effective behavioral practices. Adherence to dietary changes, physical activity, and regular medication remains suboptimal, reflecting inconsistency between what patients know and their actual self-management behaviors. Future studies should use longitudinal designs and include patients from diverse healthcare settings, including rural and primary care populations, to improve generalizability and understanding of hypertension-related behaviors.

Conflict of interest

The authors declared that they have no conflict of interests.

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