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A cross-sectional study on awareness of risk factors among hypertension patients in a district in Uttar Pradesh

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Abstract
Background: Hypertension (HTN) poses significant public health challenges globally. Modifying modifiable risk factors can profoundly impact disease progression, complications, and population-wide prevention efforts. This study aims to assess awareness of HTN risk factors among hypertension in a district in Uttar Pradesh.
Methods: Conducted as a hospital-based cross-sectional study, data were gathered from 400 patients.
Results: Results indicate that awareness of HTN risk factors often occurs after disease onset. Adequate awareness was lacking and knowledge about important risk factors like tobacco & alcohol consumption, physical inactivity, and obesity was negligible and this was of great concern.
Conclusion: The findings underscore the need for targeted education and awareness programs to improve understanding, particularly regarding less recognized risk factors such as physical inactivity and obesity. Additionally, the findings emphasize the critical role of healthcare professionals in disseminating information and promoting awareness among hypertensive patients.

Keywords: Non-communicable diseases, risk factors, lifestyle modification

Introduction
Non-communicable diseases (NCDs) have emerged as the primary contributors to global morbidity and mortality, eclipsing communicable diseases. Among NCDs, cardiovascular disease (CVD) stands out as a significant cause of disability and premature death worldwide, exerting considerable strain on healthcare costs. CVD alone accounts for 30% of the estimated 58 million global deaths, equivalent to the combined impact of infectious diseases, nutritional deficiencies, and maternal and perinatal conditions [1]. Despite common perceptions, CVDs are prevalent in the Indian subcontinent, underscoring the dual burden of communicable diseases and NCDs faced by India [2]. Hypertension (HTN), a prevalent form of CVD, serves as a major risk factor for conditions like coronary heart disease (CHD). Recent meta-analyses have revealed alarming prevalence rates of hypertension, particularly in urban and rural Indian populations, with HTN being directly implicated in a substantial portion of stroke and coronary heart disease deaths in India [3, 4]. The escalating prevalence of HTN can be largely attributed to rapid shifts in lifestyle practices, particularly evident in developing countries like India. Given the pivotal role of modifiable risk factors in disease prevention, it is imperative to assess patient awareness regarding these factors [5, 6]. Despite numerous population-based studies on risk factor awareness, research focusing on patient populations has been lacking. This highlights the critical need for research, particularly in the context of HTN, to evaluate awareness of risk factors among patients already diagnosed with these conditions, to avert further complications. The present study aimed: (1) to evaluate awareness of HTN risk factors.

Methods
This research comprised a hospital-based cross-sectional study conducted in the designated OPD of a tertiary care hospital in Mathura, a district located in the northern state of Uttar Pradesh, India, during the year 2018-19. An anticipated prevalence value (P) of 50% was adopted, following the guidelines outlined in the WHO practical manual [7]. A relative allowable error of 10% was applied, yielding a sample size of 400, calculated using the formula 4 pq/L^2.

Inclusion Criteria
- Individuals aged 30 years or older.
- Patients with a confirmed diagnosis of hypertension (HTN).

Exclusion Criteria
- Individuals not meeting the inclusion criteria.
- Patients unwilling to participate.
- Individuals experiencing critical or mental health conditions.
- Patients diagnosed with hypertension during ongoing pregnancy.

Data Collection was done by personal interviews conducted in a language comprehensible to participants, utilizing a pre-designed, pre-tested, semi-structured questionnaire. Questions covered socio-demographic factors and knowledge regarding HTN risk factors. Additionally, clinical assessments, including blood pressure and anthropometric measurements, were performed. All study participants provided informed consent. Data entry was executed using Microsoft Office Excel, with subsequent analysis conducted utilizing MedCalc.

Results

The study population consisted of 400 hypertensive patients attending selected health facilities in Mathura. Among those interviewed, 8% (32) were aged 30-39 years, 26.8% (107) were aged 40-49 years, 25.5% (102) were aged 50-59 years, 27% (108) were aged 60-69 years, and 12.8% (51) were aged over 69 years. In terms of gender distribution, 58% (232) were male and 42% (168) were female. Almost 83% were Hindu followed by 16.5% Muslims. The majority were married (87.8%), with a small percentage being single (12.6%). Around, 75.5% were literate. Most were housewives (38.3%) followed by private sector job holders (21.5%). (Table 1) It was noted that 8.3% (33) were unaware of hypertension risk factors, while the rest were aware of at least one risk factor. The most commonly recognized risk factors were unhealthy food (89.1%) and stress (42%), while awareness was lower for physical inactivity (3.5%), and obesity (1.6%). It's noteworthy that 17% only tobacco use and alcohol consumption. Of those aware of various risk factors, 88.5% (354) received information from health professionals, while a small percentage obtained information from other sources such as media or friends. Notably, 98% (360) gained knowledge about risk factors only after diagnosis. (Table 2).

Table 1: Socio-demographic profile of the study sample (N=400)

Socio-demographic Variables	No	Percentage (%)
Age group (in completed years)		
30-39	32	8
40-49	107	26.75
50-59	102	25.5
60-69	108	27
>69	51	12.75
Sex		
Male	232	58
Female	168	42
Religion		
Hindu	331	82.75
Muslim	66	16.5
Others	3	0.75
Literacy status		
Illiterate	98	24.5
Literate	302	75.5
Marital Status		
Married	351	87.75
Single	49	12.25
Occupation		
Private sector	86	21.5
Business	29	7.25
Farmer	30	7.5
Service	28	7
Housewife	153	38.25
Retired	56	14
Others	18	4.5
Duration of HTN		
≤ 5 years	256	64
>5 years	144	36

Table 2: Distribution of study subjects according to the source of information of the risk factors of HTN

		No.	%
Source of information (n=400)			
Aware	Health professional	354	88.5
	Others	13	3.25
Unaware		33	8.25
Time of gaining knowledge about the risk factors (n=367)			
Before having the disease		7	1.9
After having the disease		360	98.1
Knowledge of risk factors* (n=367)			
Unhealthy diet including salt intake		327	89.1
Obesity		6	1.63
Physical inactivity		13	3.54
Stress		154	41.96
Tobacco use and alcohol		62	16.89

Discussion

The study encompassed individuals aged 30-59 years, a demographic typically associated with peak economic productivity, constituting nearly three-fifths of the total participants. Interestingly, the prevalence of the condition was observed to be lowest among the younger age groups. These findings align with those reported in studies conducted in Jamnagar city [8, 9]. The majority of patients were female, a trend consistent with findings observed in studies conducted across diverse regions such as Turkey, India, the USA, and Nigeria [9, 10, 11, 12, 13]. An individual's literacy status significantly influences their lifestyle choices and attitudes, thereby impacting their susceptibility to risk factors and disease management. In this study, 24.5% of

patients were found to be illiterate. Interestingly, a higher literacy rate (92%) was observed in Pandor's study [8]. Occupational type plays a crucial role in influencing an individual's susceptibility to hypertension risk factors. In this study, the majority of the patients were identified as housewives, followed by private job holders and retired individuals. However, the occupational distribution differed notably in two studies conducted in Gujarat [8, 9]. Marriage stands as a significant determinant of stress levels in an individual's life, consequently influencing the likelihood of hypertension. The majority of patients included in this study were married, a trend consistent with findings observed in similar studies [8, 9, 14].

Efforts were directed towards examining the awareness of risk factors among the study participants, recognizing that enhanced awareness facilitates secondary prevention through improved control and adoption of healthier lifestyle practices. Encouragingly, the majority (91.75%) demonstrated awareness of at least one risk factor, surpassing findings from a study conducted in Saudi Arabia where only 68% of participants exhibited poor knowledge regarding hypertension [15]. The majority of participants recognized unhealthy dietary habits such as high salt intake and fatty foods, along with stress, as risk factors for hypertension. However, only a minority were aware of tobacco use, alcohol consumption, physical inactivity, and obesity as additional risk factors. Notably, Shah T. (2005) reported a higher awareness rate (71.33%) specifically regarding fatty foods as a risk factor, indicating a relatively better awareness of unhealthy dietary habits in the present study [14]. In contrast to the present study, participants in Shah's study exhibited higher awareness rates for obesity (27.67%), smoking (22.33%), high cholesterol (23%), and a sedentary lifestyle (26.33%) as risk factors [14]. In our study, health professionals emerged as the primary source of information regarding risk factors. However, it is concerning that a substantial proportion (93%) of participants acquired this knowledge only after receiving a diagnosis.

Conclusion

Hypertension poses a significant public health challenge due to its role as a reversible risk factor for several critical conditions including coronary heart disease, stroke, congestive heart failure, renal failure, and peripheral vascular disease. Despite being modifiable, hypertension persists as a widespread issue in contemporary society. Research demonstrates that cardiovascular disease can be prevented or managed through the modification of various risk factors. However, a notable gap exists wherein many patients are not adequately informed about these risk factors, often gaining awareness only after being diagnosed with the condition. This lack of awareness is concerning and necessitates urgent attention. It underscores the importance of widespread health education initiatives leveraging platforms such as television, newspapers, social media, radio, and dedicated efforts by healthcare professionals to engage in opportunistic counseling. Additionally, the findings underscore the importance of addressing broader developmental aspects such as literacy, poverty, and urbanization alongside health interventions.

Conflict of Interest

Not available.

Financial Support

Not available.

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