

Unveiling the Risk Factors of Non-Communicable Diseases in India: A Comprehensive Analysis of NHFS-5 (2019-20) Data

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ABSTRACT

Non-communicable diseases or NCDs are the silent killers, posing a harm to one's health without causing any symptoms until the condition has progressed to an advanced state. The World Health Organization (WHO) projected that NCDs caused 41 million of the 57 million deaths worldwide in 2016, with the majority (78%) occurring in low- and middle-income countries (LMICs). The rising prevalence of diabetes and hypertension has drawn international attention. It's not just a long-term illness, but it's also a life-threatening condition. The Union Ministry of Health and Family Welfare has now released the first phase data from the fifth edition of the National Family Health Survey (NFHS) 2019-20. The results of Phase 1 comprise data from 17 states and 5 Union Territories (including J&K), and they depict the level of health in these areas prior to the COVID outbreak. Based on the current NFHS 5-National inspection report, the prevalence of hypertension and diabetes is higher in males in urban subjects than in rural in all the three categories. Also, NFHS-5 shows the more prevalence rate in comparison to NFHS-4.

Keywords: *Non-communicable diseases, Hypertension, High blood sugar, NFHS-5, NFHS-4.*

INTRODUCTION

Non-communicable diseases (NCDs) are a diverse class of chronic diseases and are of major public health concern in low-resource countries. The major risk factors of NCDs includes smoking, consumption of tobacco and alcohol, unhealthy diet, blood pressure, blood sugar, hypercholesterolemia and inactivity which further lead to the intermediate risk factors such as obesity, hypertension, cardiovascular diseases, diabetes and cancer. According to World Health Organization 2018 report¹, cardiovascular diseases (CVD) account for highest among all the NCDs with 17.9 million people deaths annually, followed by

cancers (9.0 million), respiratory diseases (3.9 million), and diabetes (1.6 million).

Notably, the population residing in low-to-middle income countries are changing their lifestyle pattern towards unhealthy diets in line with the sedentary jobs, digital gizmos which is bringing down physical activity and increases the risk of NCDs^{2,3}. Moreover, a higher prevalence of diabetes, dyslipidemia, and hypertension has been observed more in urban areas⁴. Further, study conducted outlined that six in ten adults in large South Asian cities such as Chennai, Delhi, and Karachi are suffering from either diabetes or prediabetes⁵.

The coexistence of hypertension and diabetes continues to rise worldwide with leading risk factors for atherosclerosis and its complications, including heart attacks and strokes. There is substantial overlap between diabetes and hypertension, reflecting substantial overlap in their etiology and disease mechanisms. It is estimated that hypertension affects 1 billion⁶ and 422 million⁷ people globally, respectively. Epidemiology of both hypertension and diabetes varies in India because it is a diverse country and people follow different lifestyle practices in different states. Additionally, raised blood pressure (BP) is estimated to cause 7.5 million deaths, which accounts for 57 million disability-adjusted life years (DALYs). Among states, the crude prevalence of diabetes and hypertension varied from 3.2% (95% CI, 2.7%-3.7%) to 19.9% (95% CI, 17.6%-22.3%), and 18.0% (95% CI, 16.6%-19.5%) to 41.6% (95% CI, 37.8%-45.5%), respectively⁸.

METHODS

According to the review, data on selected NCD risk variables among men and women aged 15-49 years was obtained from the most recent National Family Health Survey (NFHS-5) performed across India. It emphasises the high prevalence of hypertension and diabetes in India's many states, both in rural and urban populations.

RESULTS

About National Family Health Survey (NFHS)

The National Family Health Survey is a massive, multi-round survey conducted across the country to collect data on a variety of parameters that will ultimately assist the Ministry of Health and Family Welfare (MOHFW) in framing policies and programmes to assist in the upliftment of India's vulnerable groups⁹. The International Institute for Population Sciences (IIPS) in Mumbai has been selected as the coordinating agency for the survey, with

responsibility for providing coordination and technical guidance.

Significance of NFHS

- In India, the survey collects information on fertility, infant and child mortality, family planning, maternal and child health, reproductive health, nutrition, and other factors.
- Each round of the NFHS has two particular targets:
 - To provide vital statistics on health and family welfare to the Ministry of Health and Family Welfare and other authorities for policy and programme objectives.
 - To inform people about new strategic health and family welfare issues.
- The main objectives-
 - Delivering accurate and dependable data to improve India's demography and health database.
 - To increase the survey research capabilities of Indian institutes so that they can provide, analyse, and exchange high-quality data.
 - Anticipate and respond to the country's expanding data needs in the areas of health and family welfare.
- NFHS data are also useful in-
 - Setting goals and benchmarks.
 - Keeping track on the status of ongoing projects.
 - In determining the need for new programmes with a specific focus.

About National Family Health Survey 2019-20 (NFHS-5)

➤ NFHS 5 Findings for high blood pressure:

Using the OMRON BP monitor, blood pressure readings were collected in NFHS-5 to examine the prevalence of high blood pressure in the community. Three blood pressure readings were taken to determine the respondent's blood pressure. Women and

males aged 15-49 years were given blood pressure readings¹⁰.

The NFHS-5¹⁰ divides hypertension into three sub-categories i.e.

- **Mildly elevated blood pressure** (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)
- **Moderately or severely elevated blood pressure** (Systolic ≥ 160 mm of Hg and/or Diastolic ≥ 100 mm of Hg) (%)
- **Elevated blood pressure** (Systolic ≥ 140 mm of Hg and/or Diastolic ≥ 90 mm of Hg) or taking medicine to control blood pressure (%)

Table 1 represents the prevalence of hypertension in India in both rural and urban population in both the gender. As per the NFHS-5 data, the average prevalence of mild blood pressure (Systolic/Diastolic 140-159 mm of Hg/ 90-99 mm of Hg), moderately or severely elevated blood pressure (Systolic/Diastolic ≥ 160 mm of Hg/ ≥ 100 mm of Hg), elevated blood pressure (Systolic/Diastolic ≥ 140 mm of Hg/ ≥ 90 mm

of Hg) are 28.4%, 11%, 47.6% (includes total of all the three categories for both men and women). Males account for 46.9% of the total population, compared to 40.1 percent for females, and this is true across all three groups. The third category, which includes 22.4 percent of women and 25.2 percent of men, has the highest number of respondents with raised blood pressure.

Table 1: Prevalence of Hypertension in both men and women in India¹⁰

Mild elevated blood pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)						Moderately or severely elevated BP (Systolic ≥ 160 mm of Hg and/or Diastolic ≥ 100 mm of Hg) (%)						Elevated blood pressure (Systolic ≥ 140 mm of Hg and/or Diastolic ≥ 90 mm of Hg) (%)					
WOMEN			MEN			WOMEN			MEN			WOMEN			MEN		
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
12.8	12.2	12.5	16.4	15.5	15.9	5.1	5.2	5.2	5.9	5.7	5.8	23.7	21.5	22.4	26.8	24.3	25.2

Table 2 reveals that NFHS-5 data depicts the mean prevalence is highest among urban as compared to rural areas in all the three categories.

Table 2: Prevalence of Hypertension in urban and rural areas in India¹⁰

Mild elevated blood pressure (Systolic 140-159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%)			Moderately or severely elevated BP (Systolic ≥ 160 mm of Hg and/or Diastolic ≥ 100 mm of Hg) (%)			Elevated blood pressure (Systolic ≥ 140 mm of Hg and/or Diastolic ≥ 90 mm of Hg) (%)		
Urban	Rural		Urban	Rural		Urban	Rural	
29.2	27.7		11	10.9		50.5	45.8	

The graph below shows the differences in blood pressure between urban and rural areas in all three categories. In comparison to the rural population, which accounts for

45.8% of the population, 50.5 percent of those living in urban have elevated blood pressure (SBP/DBP $\geq 140/ \geq 90$ mm of Hg).

Graph 1: Depicting the prevalence of high blood pressure in urban and rural areas in India¹⁰

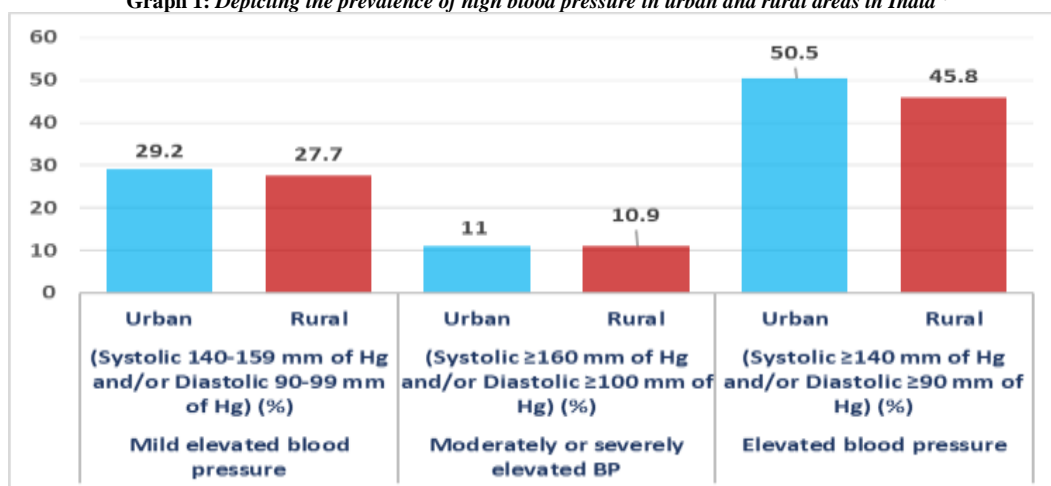


Table 3 represents the State/Union Territories –wise mean prevalence of high blood pressure which shows a wide variance across different states/UTs. The highest prevalence of ‘elevated blood pressure, SBP/DBP $\geq 140/\geq 90$ mm Hg’ was observed in Sikkim i.e., 76.1 percent (41.6% in men and 34.5% in female) and lowest in Dadar & Nagar i.e., 30.3% for both urban and rural populations.

Further on analysis (Table 3), the prevalence of ‘mild’ blood pressure among adults aged 15-49 years ranges is lowest in Dadar & Nagar Haveli (11.7%), Ladakh (12.1%), Bihar (12.3%), Meghalaya and Mizoram (13.9%). The prevalence of ‘moderate’ blood pressure is lowest in Dadar & Nagar Haveli (13.5%), Ladakh (13.5%), Jammu & Kashmir (15.1%), Bihar (15.5%), West Bengal (17.3%).

Table 3. The prevalence of high blood pressure among State/Union territory (NHFS-5)

Sl. No.	State/Union Territory (Alphabetical Order)	Mild elevated blood pressure (Systolic/Diastolic: 140-159/ 90-99 mm Hg) (%)						Moderately or severely elevated BP (Systolic/Diastolic: ≥160/ ≥100 mm Hg) (%)						Elevated blood pressure (Systolic/Diastolic: ≥140/ ≥90 mm Hg) (%)					
		WOMEN			MEN			WOMEN			MEN			WOMEN			MEN		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1	ANDAMAN & NICOBAR	12.6	16.9	15.3	17.6	22.1	20.6	5.0	4.8	4.9	6.5	6.4	6.5	23.4	26.4	25.3	28.2	31.2	30.2
2	ANDHARA PRADESH	14.4	13.2	13.6	19.2	16.9	17.6	6.2	5.8	5.9	7.4	6.9	7.1	27.5	24.3	25.3	32.2	27.6	29.0
3	ASSAM	12.0	10.8	11.0	13.8	12.7	12.9	5.1	4.7	4.8	5.3	4.2	4.4	22.5	18.5	19.1	23.8	19.6	20.3
4	BIHAR	9.0	8.6	8.7	11.7	11.0	11.2	3.2	3.7	3.6	4.2	4.3	4.3	16.6	15.8	15.9	19.5	18.1	18.4
5	DADAR & NAGAR HAVELI	8.9	6.7	7.7	11.9	7.8	9.8	3.3	4.5	4.0	3.1	4.3	3.7	16.5	13.6	14.9	17.0	13.9	15.4
6	GOA	12.6	11.5	12.1	14.4	15.5	14.8	3.5	3.8	3.6	4.7	4.7	4.7	27.6	27.4	27.5	25.9	28.2	26.8
7	GUJARAT	11.4	12.0	11.7	12.7	13.3	13.1	3.8	5.1	4.6	3.9	4.8	4.4	21.1	20.1	20.6	20.3	20.3	20.3
8	HIMACHAL PRADESH	93.5	12.2	11.9	18.0	16.2	16.5	4.9	5.1	5.1	6.0	4.7	4.9	22.1	22.2	22.2	29.1	23.6	24.4
9	JAMMU & KASHMIR	11.4	11.8	11.7	12.5	12.2	12.3	3.0	3.1	3.0	2.8	2.7	2.8	21.2	19.6	20.0	20.1	18.5	18.9
10	KARNATAKA	16.3	13.8	14.8	18.5	16.5	17.2	6.1	6.2	6.2	6.8	6.6	6.7	27.4	23.4	24.0	29.2	25.5	26.9
11	KERALA	15.4	15.5	15.5	19.1	19.3	19.2	6.2	7.0	6.6	6.0	7.3	6.7	30.7	31.0	30.9	32.6	32.9	32.8
12	LAKSHWDEEP	14.4	11.8	13.9	17.5	13.4	16.6	7.2	3.5	6.5	5.4	4.1	5.1	26.5	18.4	24.8	25.9	20.7	24.7
13	LADAKH	8.2	10.9	10.4	8.5	11.9	11.2	1.6	1.7	1.7	1.5	2.5	2.3	13.5	16.3	15.7	14.5	18.1	17.4
14	MAHARASHTRA	14.1	13.4	13.7	16.8	15.4	16.0	4.4	5.5	5.0	5.0	5.5	5.3	23.8	22.6	23.1	25.7	23.5	24.4
15	MANIPUR	15.9	12.1	13.6	22.7	19.6	20.8	5.4	6.1	5.9	10.3	8.6	9.3	26.0	21.1	23.0	37.5	30.4	33.2
16	MEGHALAYA	13.6	9.0	10.0	17.8	13.2	14.2	4.9	3.6	3.9	5.8	3.4	3.8	24.6	17.1	18.7	28.5	19.9	21.4
17	MIZORAM	12.3	8.7	10.7	17.0	15.2	16.2	3.3	3.0	3.2	6.4	4.2	5.4	21.0	13.5	17.7	28.7	21.1	25.2
18	NAGALAND	12.0	14.7	13.8	16.7	20.3	19.1	6.8	7.9	7.6	8.0	9.3	8.9	19.9	23.6	22.4	26.0	30.1	28.7
19	SIKKIM	16.7	19.5	18.5	24.5	25.2	25.0	10.7	12.4	11.8	11.1	15.2	13.9	32.3	35.8	34.5	38.6	43.1	41.6
20	TELANGANA	14.3	13.2	13.6	20.5	17.5	18.5	6.3	6.3	6.3	9.1	7.6	8.1	29.1	24.7	26.1	36.8	28.9	31.4
21	TRIPURA	13.3	10.1	11.0	15.4	12.5	13.4	6.5	4.4	5.0	6.2	4.8	5.2	26.4	18.6	20.9	27.3	20.6	22.7
22	WEST BENGAL	12.3	11.1	11.5	14.5	12.3	13.1	4.9	5.5	5.3	4.2	4.2	4.2	21.5	19.9	20.5	22.3	19.0	20.1

■ Top five highest prevalence rates (Men & Women), ■ Stats/UTs with prevalence rates (Men & Women), ■ States/UT with lowest prevalence rates (Men & Women)

➤ **NFHS 5 Findings for blood glucose:**

The blood glucose level was measured in NFHS-5 after taking a finger-stick blood sample and completing a test with the Optimum H Glucometer (Abbott Laboratories, Chicago, IL, USA). The results were deemed equal to laboratory

estimations of blood glucose levels generated using the glucose oxidase method for glucose levels in the range of 10–600 mg/dL. Blood glucose were taken for women and men aged ≥ 15 years¹⁰.

NFHS-5¹⁰ has categorized blood glucose in three sub-categories i.e.

- **Blood glucose level-high (141-160 mg/dl) (%)**
- **Blood glucose level- very high (>160 mg/dl) (%)**
- **Blood glucose level-high or very high (>140 mg/dl) (%)**

The frequency of high glucose in India's rural and urban populations is shown in Table 4. According to NFHS-5 data, the average prevalence of high blood sugar (141-160 mg/dl), very high blood sugar (>160 mg/dl) and high or very high blood sugar (>140 mg/dl) are 14.6 percent, 13.8 percent and 32.1 percent respectively

(includes total for both men and women). Males have a significantly higher prevalence than females in all three groups. The third category, which includes 14.8 percent of women and 17.3 percent of men, has the highest number of responses, i.e., blood sugar levels that are high or very high (>140 mg/dl).

Table 4: Prevalence of high blood glucose in India¹⁰

Blood sugar level- high (141-160 mg/dl) (%)			Blood sugar level- very high (>160 mg/dl) (%)			Blood sugar level- high or very high (>140 mg/dl) (%)											
WOMEN			MEN			WOMEN			MEN								
Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total						
6.9	6.5	6.7	8.1	7.8	7.9	7.6	6.1	6.5	8.5	6.8	7.3	16.5	14.0	14.8	19.0	16.2	17.3

Table 5 reveals that NFHS-5 data depicts the mean prevalence of blood sugar level is highest among urban as compared to rural areas in all the three categories.

Table 5: Prevalence of high blood glucose in urban and rural areas in India¹⁰

Blood sugar level- high (141-160 mg/dl) (%)		Blood sugar level- very high (>160 mg/dl) (%)		Blood sugar level- high or very high (>140 mg/dl) (%)	
Urban	Rural	Urban	Rural	Urban	Rural
15	14.3	16.1	12.9	35.5	30.2

The graph-2 shows the differences in blood sugar between urban and rural areas in all three categories. In comparison to the rural population, which accounts for 30.2% of the

population, 35.5 percent of those living in urban have high or very high blood sugar level >140 mg/dl.

Graph 2: Depicting the prevalence of high blood sugar in urban and rural areas in India¹⁰

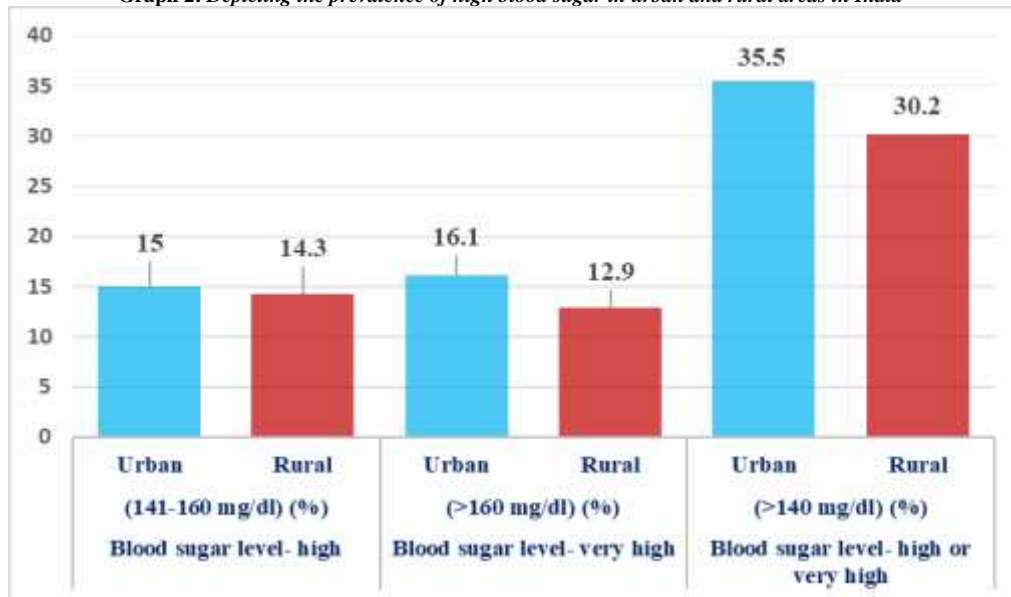


Table 6 shows the average prevalence of blood sugar levels in 17 states and 5 union territories, with significant variation between states and UTs. Kerala had the highest prevalence of 'high or very high blood sugar level, >140 mg/dl' at 51.8 percent (27 percent in men and 24.8 percent in women) while Ladakh had the lowest prevalence at 15 percent (8.3 percent in men and 6.7 percent in women) for both urban and rural areas.

Further on analysis (Table 6), the prevalence of 'high' blood glucose (141-160 mg/dl) among adults aged 15-49 years ranges is lowest in Ladakh (5.7%), Jammu & Kashmir (7.4%), Meghalaya (8%) and Nagaland (9%). The prevalence of 'very high' blood glucose (>160 mg/dl) is lowest in Ladakh (6.9%), Jammu & Kashmir (7.0%), Mizoram (11.0%), Nagaland (12.1%).

Table 6. The prevalence of high blood sugar level among State/Union territory

Sl. No.	State/Union Territory (Alphabetical Order)	Blood sugar level- high (141-160 mg/dl) (%)						Blood sugar level- very high (>160 mg/dl) (%)						Blood sugar level- high or very high (>140 mg/dl) (%)					
		WOMEN			MEN			WOMEN			MEN			WOMEN			MEN		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1	ANDAMAN & NICOBAR	8.6	6.7	7.4	9.5	9.1	9.3	9.4	7.3	8.1	8.6	6.6	7.3	19.6	16.2	17.5	19.4	17.1	17.9
2	ANDHARA PRADESH	7.8	7.0	7.3	9.2	8.1	8.4	13.2	9.2	10.4	13.7	10.4	11.4	23.2	17.9	19.5	24.9	20.5	21.8
3	ASSAM	8.4	6.6	6.9	8.8	8.3	8.4	7.0	4.5	4.9	9.5	5.6	6.2	16.6	12.1	12.8	20.4	15.2	16.0
4	BIHAR	7.2	6.3	6.4	10.2	7.8	8.3	8.0	4.9	5.4	9.2	6.5	7.0	16.3	12.0	12.7	20.3	15.4	16.2
5	DADAR & NAGAR HAVELI	5.5	7.5	6.6	7.6	8.3	8.0	7.3	4.5	5.9	8.5	6.7	7.7	14.0	13.3	13.6	17.2	15.7	16.4
6	GOA	8.2	9.1	8.6	10.3	10.3	10.3	9.7	9.5	9.6	10.8	12.9	11.6	20.6	21.1	20.8	23.0	25.9	24.1
7	GUJARAT	8.4	7.9	8.1	9.5	8.5	9.0	7.6	6.1	6.7	7.3	6.9	7.1	17.6	14.6	15.8	17.8	16.2	16.9
8	HIMACHAL PRADESH	6.8	6.3	6.4	7.9	6.6	6.8	7.1	6.3	6.4	7.7	6.5	6.7	15.4	13.7	13.9	18.3	14.2	14.7
9	JAMMU & KASHMIR	3.9	4.2	4.3	4.0	4.4	4.3	3.4	3.0	3.1	2.9	2.7	2.7	9.2	8.6	8.7	8.1	8.0	8.0
10	KARNATAKA	6.4	5.3	5.7	7.7	6.0	6.6	8.0	6.1	6.8	8.6	7.0	7.6	16.2	12.6	14.0	18.0	14.1	15.6
11	KERALA	8.2	8.4	8.3	10.1	9.6	9.8	13.0	13.1	13.1	14.1	13.6	13.8	24.8	24.8	24.8	27.4	26.7	27.0
12	LAKSHWDEEP	8.9	6.5	8.4	11.1	7.0	10.2	9.4	11.6	9.9	9.0	5.3	8.1	19.9	18.3	19.5	22.9	13.0	20.7
13	LADAKH	3.4	4.0	3.9	3.3	4.7	4.4	1.7	1.8	1.8	0.8	2.9	2.5	6.4	6.8	6.7	5.4	8.9	8.3
14	MAHARASHTRA	6.2	5.2	5.7	7.0	6.2	6.5	6.5	4.5	5.4	6.8	5.2	5.9	14.6	10.7	12.4	15.3	12.4	13.6
15	MANIPUR	6.9	5.7	6.2	7.3	6.8	7.0	7.4	5.5	6.3	10.6	6.8	8.3	16.0	12.1	13.6	19.2	14.7	16.5
16	MEGHALAYA	3.0	5.5	5.0	6.6	9.0	8.6	4.8	2.5	3.0	7.6	3.5	4.2	10.3	9.3	9.5	16.0	13.4	13.9
17	MIZORAM	6.9	6.9	6.9	7.3	8.3	7.8	6.7	5.2	6.0	3.3	3.0	3.2	16.4	14.3	15.4	21.0	13.5	17.7
18	NAGALAND	5.3	5.2	5.2	5.9	6.9	6.6	3.8	3.7	3.8	6.9	4.7	5.5	9.3	9.2	9.3	13.4	11.9	12.4
19	SIKKIM	7.6	5.5	6.2	6.9	7.7	7.5	4.9	4.5	4.7	8.1	6.4	7.0	14.6	10.9	12.2	16.2	15.5	15.7
20	TELANGANA	6.2	5.7	5.8	7.3	6.7	6.9	9.3	6.0	7.0	11.4	8.4	9.3	21.4	16.6	18.1	29.1	24.7	26.1
21	TRIPURA	9.0	8.7	8.8	8.8	9.6	9.3	10.8	6.8	8.0	10.8	8.1	8.9	21.1	16.3	17.7	21.2	18.5	19.3
22	WEST BENGAL	9.7	8.5	8.9	11.2	10.6	10.8	8.6	7.2	7.7	10.6	9.0	9.5	19.4	16.5	17.5	23.1	20.4	21.3

■ Top five highest prevalence rates (Men & Women),
 ■ Stats/UTs with prevalence rates (Men & Women),
 ■ States/UT with lowest prevalence rates (Men & Women)

Top 5 states/UTs with highest prevalence of high blood pressure and high blood glucose (NFHS-5)

The top five states with the highest prevalence of hypertension were seen in both genders (Table 7), according to the survey, are as follows (Table 6). Sikkim has the largest number of people with high blood pressure, both in males (38.9%) and females (30.3 percent). For men, Sikkim has the highest prevalence, followed by Manipur (30.1%) and Nagaland (28.0%). For women, Sikkim is followed by Kerala

(22.1%), Nagaland (21.4%), Karnataka (21.0%), Andaman & Nicobar (20.1%).

Table 7 reveals the highest frequency of elevated blood glucose among men in Kerala (23.6 percent), followed by Goa (21.9 percent), West Bengal (20.3 percent), Andhra Pradesh (19.8 percent), and Lakshadweep (18.3 percent). In compared to females, Kerala had the greatest frequency of high blood glucose (21.4%), followed by Goa (18.2%), Andhra Pradesh (17.7%), Tripura (16.8%), and West Bengal (16.6%).

Table 7. Top 5 states reporting highest prevalence of hypertension and blood glucose in Men and Women (NFHS-5)¹⁰

HIGH BLOOD PRESSURE (%)				HIGH BLOOD GLUCOSE (%)			
MEN		WOMEN		MEN		WOMEN	
State/UTs	Prevalence (%) #	State/UTs	Prevalence (%) #	State/UTs	Prevalence (%) #	State/UTs	Prevalence (%)#
Sikkim	38.9	Sikkim	30.3	Kerala	23.6	Kerala	21.4
Manipur	30.1	Kerala	22.1	Goa	21.9	Goa	18.2
Nagaland	28.0	Nagaland	21.4	West Bengal	20.3	Andhra Pradesh	17.7
Andaman & Nicobar	27.1	Karnataka	21.0	Andhra Pradesh	19.8	Tripura	16.8
Telangana	26.6	Andaman & Nicobar	20.1	Lakshadweep	18.3	West Bengal	16.6

(# refers to the sum of mild and moderate or severely elevated blood pressure)

CONCLUSION

The most frequent underlying and underestimated causes of cardiovascular disease are hypertension and diabetes. If left undiagnosed or unmanaged, it can have disastrous health repercussions in many cases. It is vital to address the current scenario of increased prevalence, not just in India but globally. The prevalence of diabetes and hypertension is higher among male than female and also more prevalent in urban areas in comparison to rural areas. Nevertheless, the hypertension and high sugar level criteria used in the NFHS -4 and NFHS-5 surveys were different, it's difficult to compare hypertension and high sugar levels in India directly. Only the category -I (mildly high blood pressure (Systolic 140-159 mm Hg and/or Diastolic 90-99 mm Hg) is identical in both surveys, showing that mild hypertension is on the rise. Mild

hypertension is on the rise in NFHS-5, compared to NFHS-4, in both men and women, as well as in urban and rural areas. Currently, a lack of comprehensive risk factor data, insufficient coverage (geographically and demographically), and the lack of a standardised methodology are the major flaws that must be addressed in order to achieve NCD control in the country. Early detection, treatment, and management of these CVD risk factors, as well as the instillation of good behaviours like nutrition and physical activity, will all contribute to a reduction in disease burden. A well-balanced diet lowers the risk of NCDs by keeping indicators of NCDs including high blood pressure, a high BMI, and high blood glucose at healthy ranges.

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