

# Hypertension In India: An Insight Into The NFHS-5 Data

Sahista Amrin<sup>1</sup>, Pranjeet Borah<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Statistics, Dibrugarh University, Assam, India, E-mail:-amrin.sahista@gmail.com

<sup>2</sup>Department of Statistics, Dibrugarh University, Assam, India, E-mail:- pranjeetborah123@gmail.com

Doi: 10.47750/pnr.2022.13.508.439

## Abstract

Non-communicable diseases are the leading cause of death globally. It accounts for 65% of all deaths in India. According to NFHS-5 data the prevalence of hypertension is higher among men than among women. In this paper an attempt is made to highlight the prevalence of hypertension among rural and urban population in India. The data for the present study was secondary in nature and was obtained from NFHS-5 factsheets.

**Keywords:** Hypertension, NFHS, NFHS-5, Prevalence.

## INTRODUCTION

Non-communicable diseases (NCD's) are the leading cause of death globally, and one of the major health challenges of the 21<sup>st</sup> century.<sup>[3]</sup> NCD's account for 65% of all deaths in India. The major metabolic risk factors for NCD's are obesity, raised blood pressure, raised glucose, and raised total cholesterol levels in the blood.<sup>[1]</sup>

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure. An individual is classified as having hypertension if he/she has a systolic blood pressure level greater than or equal to 140 mmHg, or a diastolic blood pressure greater than or equal to 90mmHg, or he/she is currently taking antihypertensive medication to lower his/her blood pressure.<sup>[1]</sup>

## METHODS

The present paper attempts to highlight the prevalence of hypertension among rural and urban population in India. The data for the present study was secondary in nature and was obtained from NFHS-5 factsheets.

## NFHS-5

The National Family Health Survey 2019-2021 (NFHS-5), the fifth in the NFHS series, provides information on population, health, and nutrition for India, each state/union territory (UT), and for 707 districts as on March 31<sup>st</sup> 2017. NFHS-5 fieldwork for India was conducted in two phases – Phase-I from 17 June 2019 to 30 January 2020 covering 17 states and 5 UT's and Phase-II from 2 January 2020 to 30 April 2021 covering 11 states and 3 UT's – by 17 Field Agencies and gathered information from 636,999 households, 724,115 women, and 101,839 men.<sup>[1]</sup>

For the first time, NFHS-5 has expanded the age range for measurement of blood pressure. Blood pressure was measured for all women and men age 15 and above using an Omron Blood Pressure Monitor to determine the prevalence of hypertension. Blood Pressure measurements for each respondent were taken three times with an interval of five minutes between readings.<sup>[1]</sup>

NFHS-5 has categorized hypertension in three sub categories:

- 1) **Mildly elevated blood pressure** (Systolic 140- 159 mm of Hg and/or Diastolic 90-99 mm of Hg) (%).
- 2) **Moderately or severely elevated blood pressure** (Systolic  $\geq$ 160 mm of Hg and/or Diastolic  $\geq$  100mm of Hg) (%).
- 3) **Elevated blood pressure** (Systolic  $\geq$  140 mm of Hg and/or Diastolic  $\geq$  90 mm of Hg) or taking medicine to control the blood pressure (%).<sup>[1]</sup>

## RESULTS

Table 1 represents the prevalence of hypertension in India in both rural and urban population.

**Table 1: Prevalence of Hypertension in India**

	MILDLY ELEVATED						MODERATELY ELEVATED						ELEVATED					
	WOMEN			MEN			WOMEN			MEN			WOMEN			MEN		
	U	R	T	U	R	T	U	R	T	U	R	T	U	R	T	U	R	T
INDIA	13.6	11.9	12.4	17.1	15.0	15.7	5.2	5.2	5.2	5.9	5.5	5.7	23.6	20.2	21.3	26.6	22.7	24.0

Source: NFHS-5 Factsheets

Prevalence is higher in case of men in total and also across all the three categories in comparison to women. Maximum number of respondents lie in the third category, i.e., elevated blood pressure (Systolic  $\geq 140$  mm of Hg and/or Diastolic  $\geq 90$  mm of Hg) or taking medicine to control the blood pressure (%) which is 21.3 % in case of women and 24.0 in case of men.

Table 2 shows the blood pressure in all the Indian states and union territories (UT's) in both urban and rural population.

**Table 2: Prevalence of Hypertension in all the Indian states and union territories**

Sl.No.	STATE/UT	MILDLY ELEVATED						MODERATELY ELEVATED						ELEVATED					
		WOMEN			MEN			WOMEN			MEN			WOMEN			MEN		
		U	R	T	U	R	T	U	R	T	U	R	T	U	R	T	U	R	T
1.	ANDAMAN AND 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.	ANDHRA 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.	DADRA & NAGAR HAVELI AND DAMAN & DIU	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	9.5	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	18.91
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	25.0	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.	LAKSHADWEEP	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.	MEGHALAYA	13.6	9.0	10.0	17.8	13.3	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
16.	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
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	4.2	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
23.	ARUNACHAL PRADESH	16.1	16.5	16.4	23.1	22.8	22.8	6.8	6.7	6.7	8.5	9.1	9.0	25.3	24.8	24.9	33.2	33.1	33.1
24.	CHATTISGARH	14.6	14.9	14.8	19.5	18.9	19.0	5.7	7.1	6.8	6.3	7.8	7.5	23.5	23.6	23.6	27.8	27.7	27.7
25.	HARYANA	13.6	11.7	12.3	17.2	16.2	16.6	5.7	5.3	5.4	7.0	6.9	6.9	22.9	20.1	21.0	26.2	24.6	25.1
26.	JHARKAND	13.0	10.5	11.1	16.3	14.6	15.1	4.7	5.1	5.0	6.5	6.0	6.1	20.1	17.0	17.8	25.3	21.6	22.6
27.	MADHYA PRADESH	13.9	12.9	13.2	17.9	15.3	16.0	5.2	5.2	5.2	5.9	5.1	5.3	22.5	19.9	20.6	25.9	21.5	22.72
28.	ODISHA	13.3	12.9	12.9	18.3	16.5	16.8	5.4	5.7	5.6	6.9	6.0	6.1	24.5	21.9	22.4	29.3	24.9	25.6
29.	PUNJAB	18.3	18.6	18.5	24.4	24.5	24.5	7.5	9.3	8.6	9.3	11.9	11.0	30.8	31.4	31.2	36.5	38.4	37.7
30.	RAJASTHAN	10.3	9.7	9.8	13.2	12.6	12.7	3.3	3.2	3.3	3.9	3.6	3.6	16.9	14.9	15.4	19.2	17.4	17.9
31.	TAMIL NADU	14.8	13.8	14.3	20.1	19.0	19.5	6.5	5.9	6.2	7.6	7.1	7.4	26.4	23.4	24.8	31.5	29.0	30.2
32.	UTTAR PRADESH	13.2	11.0	11.5	17.3	14.5	15.2	5.5	4.7	4.9	6.0	5.0	5.2	20.9	17.6	18.4	24.8	20.7	21.7
33.	UTTARAKHAND	14.3	13.4	13.7	21.2	19.6	20.1	6.1	6.3	6.3	10.2	9.2	9.5	25.4	22.0	22.9	34.8	30.5	31.8
34.	CHANDIGARH	14.4	20.0	14.5	18.61	9.2	18.7	5.5	6.7	5.6	8.6	15.4	8.7	25.0	30.0	25.0	30.6	34.6	30.6
35.	NCT OF DELHI	14.7	13.5	14.7	21.9	18.1	21.8	6.0	3.4	3.9	8.7	10.5	8.7	24.2	20.2	24.1	32.8	31.0	32.8
36.	PUDUCHERRY	12.4	11.7	12.1	20.0	17.1	19.1	4.4	3.0	4.0	6.0	7.4	6.4	24.3	20.2	23.0	31.1	28.0	30.1

Source: NFHS-5 Factsheets

The highest prevalence<sup>#</sup> was seen in Sikkim and lowest in Dadra & Nagar Haveli and Daman & Diu for both urban and rural population as well as for both the genders.

Further analysis of the present study highlights that the top five states with highest prevalence<sup>#</sup> are Sikkim, Punjab, Arunachal Pradesh, Kerala and NCT of Delhi.

Table 3 and 4 shows the prevalence rates in case of men and women.

**Table 3: Top 5 states reporting highest prevalence of hypertension in women and men**

Sl. No.	Women <sup>#</sup>		Men <sup>#</sup>	
	States/UT	%	States/UT	%
1.	SIKKIM	63.7	SIKKIM	78.85
2.	PUNJAB	57.95	PUNJAB	72.5
3.	KERALA	52.9	ARUNACHAL	64.9
4.	CHANDIGARH	50.8	MANIPUR	64.55
5.	ARUNACHAL	48.1	UTTARAKHAND	62.75

**Table 4:** Top 5 states reporting lowest prevalence of hypertension in women and men

Sl. No.	Women <sup>##</sup>		Men <sup>##</sup>	
	States/UT	%	States/UT	%
1.	LADAKH	26.1	LADAKH	28.5
2.	DADRA &NAGAR HAVELI & DAMAN &DIU	26.75	DADRA &NAGAR HAVELI & DAMAN &DIU	29
3.	BIHAR	28.45	BIHAR	34.4
4.	RAJASTHAN	29.15	JAMMU & KASHMIR	34.4
5.	MIZORAM	30.9	RAJASTHAN	34.95

From table 3 and 4, it is seen Sikkim has the highest prevalence of hypertension for women and as well as men while Ladakh has the lowest prevalence of hypertension in women as well as men.

## CONCLUSION

From the present study we conclude that Sikkim has the highest prevalence of hypertension while Dadar & Nagar Haveli and Daman & Diu has the lowest prevalence among all the states/UT's of India.

(# depicts the total of all the categories for both women and men)

(## depicts average of rural and urban population and sum of all the three categories of high blood pressure as categorized by NFHS-5)

## REFERENCES

1. International Institute for Population Sciences (IIPS) and ICF. 2021. National Family Health Survey (NFHS-5), 2019-21: India. Mumbai: IIPS
2. Kaur, H., & Aeri, B. T. (2017). Hypertension in India: An insight into the nfhs-4 data. *Inter J Sci Res Publ*, 7(7), 539-543.
3. Noncommunicable diseases country profiles 2018. Geneva: World Health Organization; 2018. Licence: CC BY-NC-SA 3.0 IGO.
4. Patel S, Patel P. Trend of hypertension in Gujarat-Understanding the NFHS-4 and NFHS-5 Data. *Natl J Community Med* 2021; 12(1):8-10. DOI: 10.5455/NJCM.20210205081335.