

# Hypertension and Overweight among Women of Haryana and their Correlates: A Geographical Study

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**Abstract:** Many studies have shown body weight to correlate with blood pressure and the prevalence of hypertension, but few have examined whether the correlation between overweight and hypertension holds at higher levels of blood pressure. In this article, an attempt was made to analyze the spatial variations in overweight and hypertension among women in Haryana. We take different variables like percentage of people use iodized salt, the percentage of safe drinking water availability, the percentage of sanitation availability, the percentage of electricity availability, the percentage of clean fuel availability, percentage of overweight female and percentage of a female suffering from hypertension in all 21 districts of Haryana. These are the variables of quality of life and instruments of a better life. In this study, we use Arc GIS 9.3 to show the spatial pattern of the above variables. The SPSS 16 used to correlate the variables. The finding shows that Hypertension among women in Haryana is significantly and negatively associated with overweight women. Nevertheless, overweight females are positively associated with all amenities availability

**Keywords:** Overweight women, women suffering From Hypertension, Spatial Pattern, Haryana.

## INTRODUCTION

Overweight is a weight record between 25.0 to 29.9 kg/m<sup>2</sup>. Weight is a weight list of 30 kg/m<sup>2</sup> or higher. Heftiness and stoutness are chance variables for hypertension, dyslipidemia, and diabetes mellitus. The Framingham Study exhibited that corpulence was about twice as predominant in large men and in fat ladies as in men and in ladies with an ordinary Metropolitan relative weight. The Framingham Study likewise exhibited that the two people had an expansion in pulse with expanded overweight. People in the most elevated weight list quartile had a 16 mmHg higher systolic circulatory strain and a 9 mmHg higher diastolic pulse than people in the least weight list quartile. In this investigation, the systolic circulatory strain expanded 4 mmHg for each 4.5 kg of expanded weight. Protection industry information has likewise appeared positive connection between overweight or weight with hypertension.

In 19,841 Canadians matured 18 to 74 years, the commonness of hypertension in men and in ladies expanded with expanding weight list, particularly in those matured 18 to 34 years. In the more youthful grown-ups, people with a weight list of in excess of 30 kg/m<sup>2</sup> had a 5 times higher predominance of hypertension than people with a weight list less than 20 kg/m<sup>2</sup>. An accomplice of 82,473 female medical attendants in the United States, matured 30 to 55 years was pursued at regular intervals since 1976. In 1992,

the weight record was emphatically connected with the advancement of hypertension. Contrasted and a load change of 2 kg or less, the danger of hypertension was 15% less in ladies who lost 5 to 9.9 kg, 26% less in ladies who lost 10 kg or increasingly, expanded 74% in ladies who picked up 5 to 9.9 kg, and expanded 5.21 occasions in ladies who picked up 25 kg or more.

In the across the nation Community Hypertension Evaluation Clinic screening of more than 1 million people, the commonness of hypertension in overweight people matured 20 to 39 years was twice that of people with an ordinary weight and multiple times higher than that of underweight people. In the overweight people matured 40 to 64 years, the pervasiveness of hypertension was half higher than that of people with an ordinary weight and 100% higher than that of underweight people. In 22,354 Korean people, there was a relationship between weight file and systolic and diastolic circulatory strain over a weight record scope of 16 to 31 kg/m<sup>2</sup>. Inferable hazard gauges from the Framingham Offspring Study of 2,027 men and 2,267 ladies matured 20 to 49 years pursued for a long time demonstrated that stoutness might be in charge of 78% of hypertension in men and for 65% of hypertension in ladies. Changes in muscle versus fat more than 8 years were related to changes in both systolic and diastolic circulatory strain. Notably, hefty ladies in their fourth decade had a 7 times increment in hypertension than leaned ladies of a similar age.

The second Nurses' Health Study was a forthcoming associate investigation of 83,882 ladies matured 27 to 44 years with a typical circulatory strain who were finished for a long time in 2005 for occurrence hypertension. The most grounded hazard factor for creating hypertension was an expanded weight record with large ladies having a 4.7 occasions higher rate of hypertension than did ladies with a weight list under 23.0 kg/m<sup>2</sup>. In this examination, 40% of new hypertension cases were credited to overweight or stoutness, and half of the new hypertension cases were inferable from a weight record of 23 kg/m<sup>2</sup> or higher.

### **Objectives:**

- 1) To analyze the spatial variations in overweight and hypertension among women in Haryana
- 2) To find out the correlates of overweight and hypertension among women in Haryana

### **Data and Methodology:**

The study area of the present study is Haryana because it lies in the list of lower sex ratio States. The district takes as the unit of study. The data used in the present study taken from national family health surveys 2015-2016 and census of India 2011.

**Methodology:** After collecting the data it is arranged, tabulated, calculated and analyzed. Results occurred from this calculation is further represented by maps which are prepared by Arc-GIS 9.3. and range method is

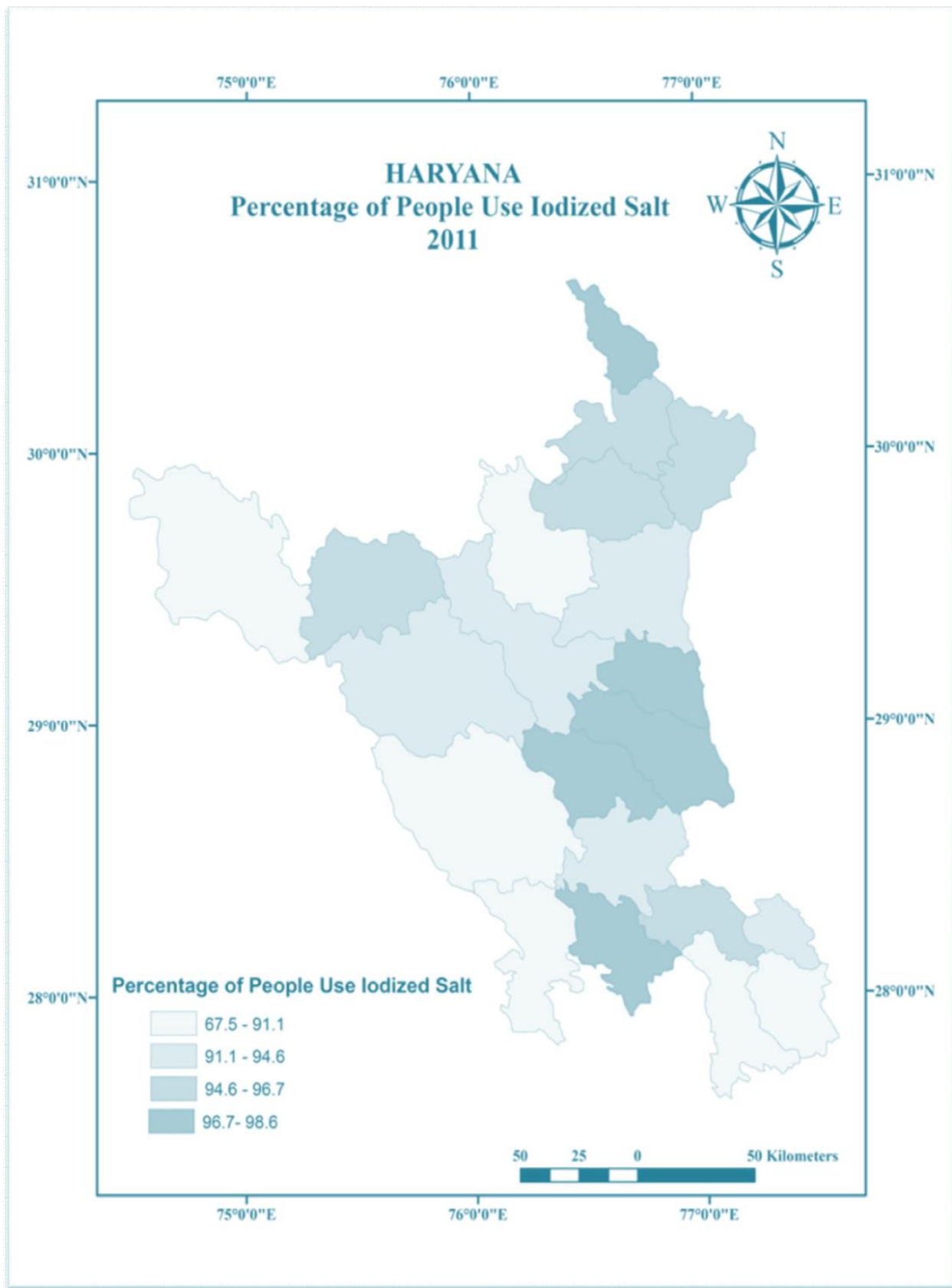
used to form four categories of the data (high, moderately high, moderately low and low). Correlations between all these 7 variables have calculated with the help of SPSS16 software. Iodized Salt, Water Sanitation, Electricity, Clean fuel, Over Weight, Hypertension.

## RESULTS AND DISCUSSION:

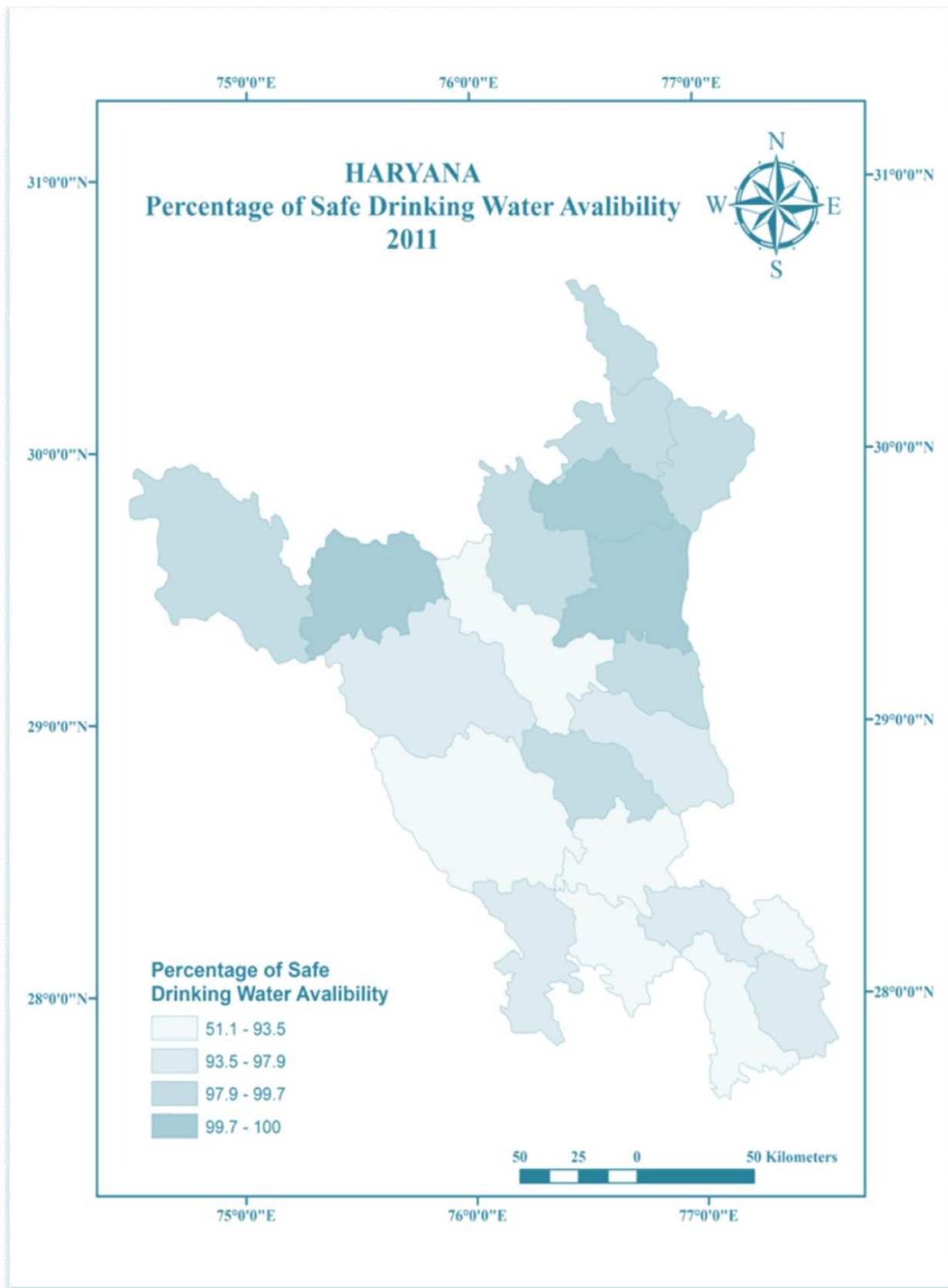
- A. Percentage of People Use Iodized Salt:** Iodine is helpful for legitimate improvement and digestion in people. In Haryana there are 92.5% individuals utilized iodized salt, however, this rate ought to be more. There is no area in Haryana where the level of iodized salt utilizing individuals is 99%. The rate differs from 67.5% in Mewat region to 98.6% in Rohtak. The great rate is likewise found in region Rewari 97.1 rate, Panipat 98.2% and Panchkula 98.3%. On the opposite side here additionally Mewat is most minimal with 67.5%. Alternate areas like Palwal, Sirsa, Kaithal has indicated less level of iodized client individuals.
- B. Percentage of Safe Drinking Water Availability:** Haryana has appeared an extraordinary enhancement in the supply of safe drinking water. 93.32% populace of Haryana is outfitted with safe drinking water. However, this accessibility is distinctive in every one of the regions of the state. On the off chance that we see on the above guide which is demonstrating the level of safe drinking water accessibility then we find that there are a few regions like Karnal, Kurukshetra, Yamunanagar, Panipat and Fatehabad are having over 99.7% safe drinking water accessibility. It is extremely fascinating to see that Karnal is the region which is proficient to supply safe drinking water to its everything 100% populace. Then again the execution is poor in a few areas like Faridabad, Mewat, Jind, Jhajjar and Bhiwani. Here the level of safe drinking water accessibility is low. The poorest condition is of locale Faridabad where this rate is 51.1%.
- C. Percentage of Sanitation Availability:** In the sanitation perspective, the execution of Haryana is normal. It is normal for the accessibility of sanitation. The absolute level of Haryana for sanitation accessibility is 79.15%, which isn't terrible. In any case, this accessibility shifts in every one of the locale. There has no region where the accessibility level of sanitation is over 90%. The most astounding rate recorded in locale Ambala where this rate is 89.9%, trailed by region Karnal with 87.5% then Fatehabad and Panchkula are 87.5% and 86.9% separately. The above locale is in great condition yet there is likewise another face of this accessibility, which isn't great. There are a few areas, which have less level of sanitation accessibility, this locale re Mewat 46.7%, Gurgaon 66.3%, Palwal 66.4% and Rewari 69.7%.
- D. Percentage of Electricity Availability:** Haryana is outfitted with good electricity to its everything populace. On a normal, the level of power accessibility in Haryana is 94.31% as indicated by the National Family Health Survey 2015-16. Every one of the locales is all around outfitted with power office aside from region Mewat, here the level of accessibility of power is most reduced among

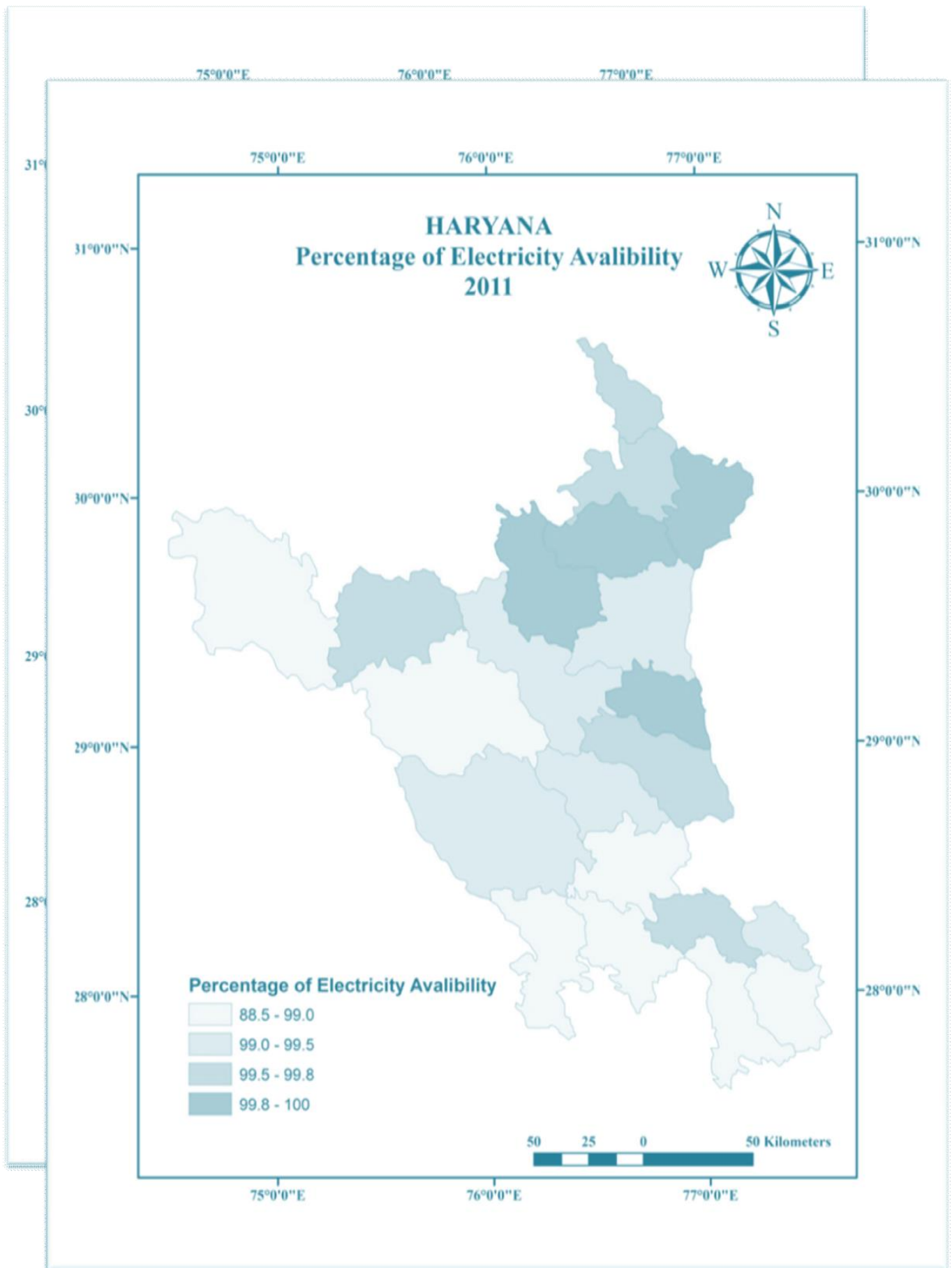
every one of the areas. In Mewat locale, the level of this is 88.5%. After this area, the Palwal region has appeared terrible execution of power accessibility, here the level of power accessibility is 93.2%. Panipat area has penny per cent accessibility of power. Yamunanagar, Kurukshetra, Kaithal, Fatehabad, Ambala and Gurgaon locale are additionally performed well in this specific situation. In this locale over 93% populace is loaded up with power supply.

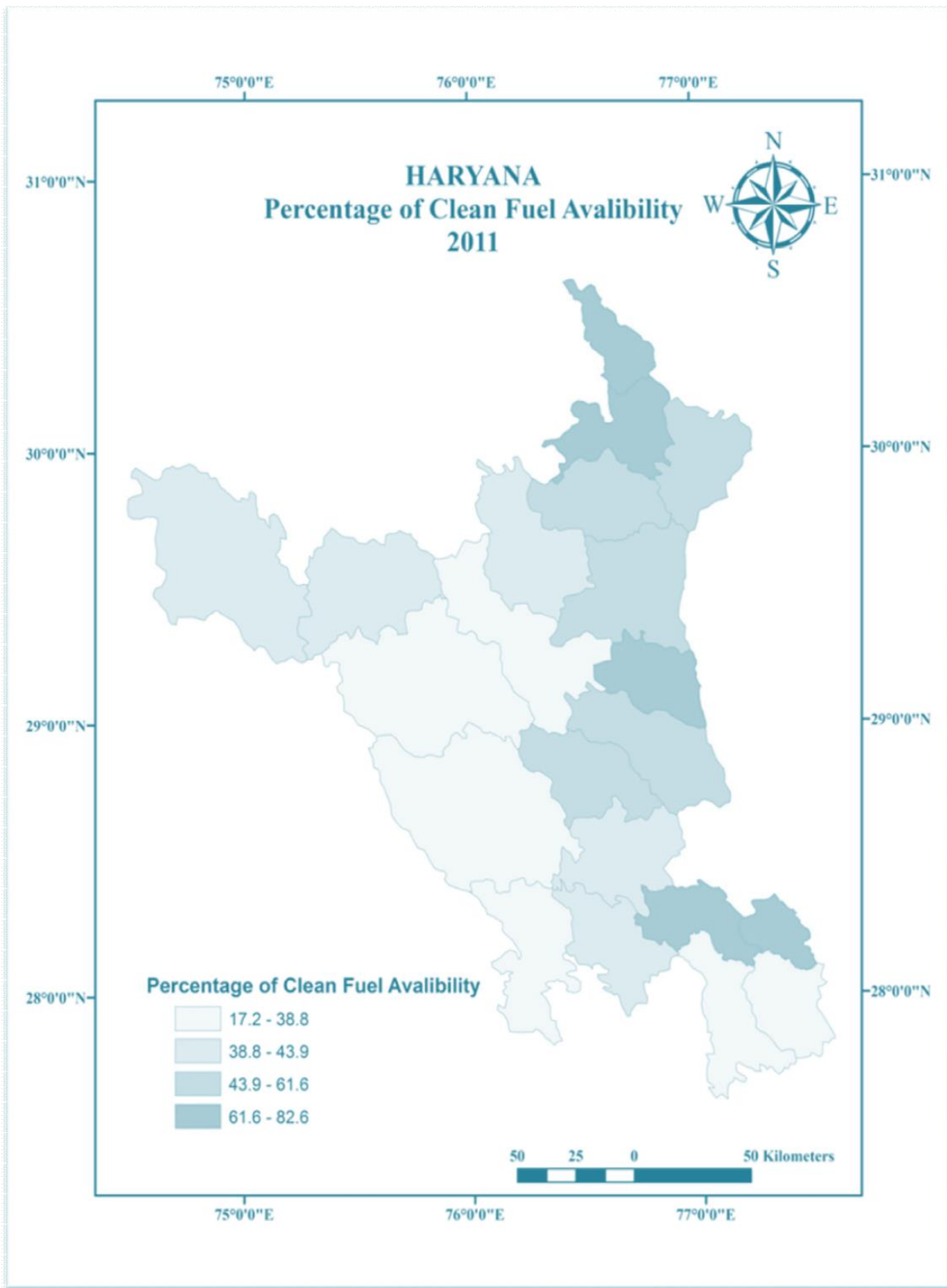
- E. Percentage of Clean Fuel Availability:** Accessibility of clean fuel in Haryana isn't in fine circumstance. The complete accessibility level of clean fuel in Haryana is 49.4%. In area Faridabad (82.6%), Gurgaon (82%), Panchkula (77.3%) and Ambala (67.8%) the state of fuel accessibility is great. On the opposite side region Mewat (17.2%), Palwal (30.6%), Mahendergah (32.9%) having the exact awful conditions. In different areas like Jind, Jhajjar, Rewari, Fatehabad and Bhiwani the accessibility of clean fuel is additionally less.
- F. Percentage of Overweight Female:** Overweight is a circumstance when our muscle versus fat expanded to more than ideally sound. It is a typical thing when nourishment supply is copious and way of life is inactive. In Haryana, the overweight female rate is 19.77%. This is definitely not a decent sign since it brings forth a ton of unsafe malady. In the locale of Haryana, this rate additionally shifts from urban to rustic regions. The most extreme level of overweight female overweight is established in Sonipat District. Here 31.3% of females are overweight. Kaithal 25.3%, Karnal 26.3%, Panipat 25.8% and Faridabad areas additionally recorded high level of overweight female populace. Then again areas of Mewat 12.2%, Ambala 12.7%, Fatehabad 15.1% and Mahendergarh 14.4% recorded with the least level of overweight female populace.
- G. Percentage of Female Suffering from Hypertension:** Hypertension is ordinarily known as hypertension. The pulse in supply routes of our body determinedly brings high up in a condition. It is happened simply because of the way of life and hereditary variables. Females are inclined to hypertension in light of their way of life. With regards to Haryana, the 7.70% female populace is experiencing the issue of hypertension. The most extreme level of ladies who are experiencing this issue is recorded in Fatehabad region where this rate is 13.1%. The base rate recorded in Sonipat region with 3.8%. In Mahendergarh and Yamunanagar this rate is 10.4% and 10.1% separately. The Karnal 4.6% and Jind 5.6% have a low level of female populace experienced hypertension.



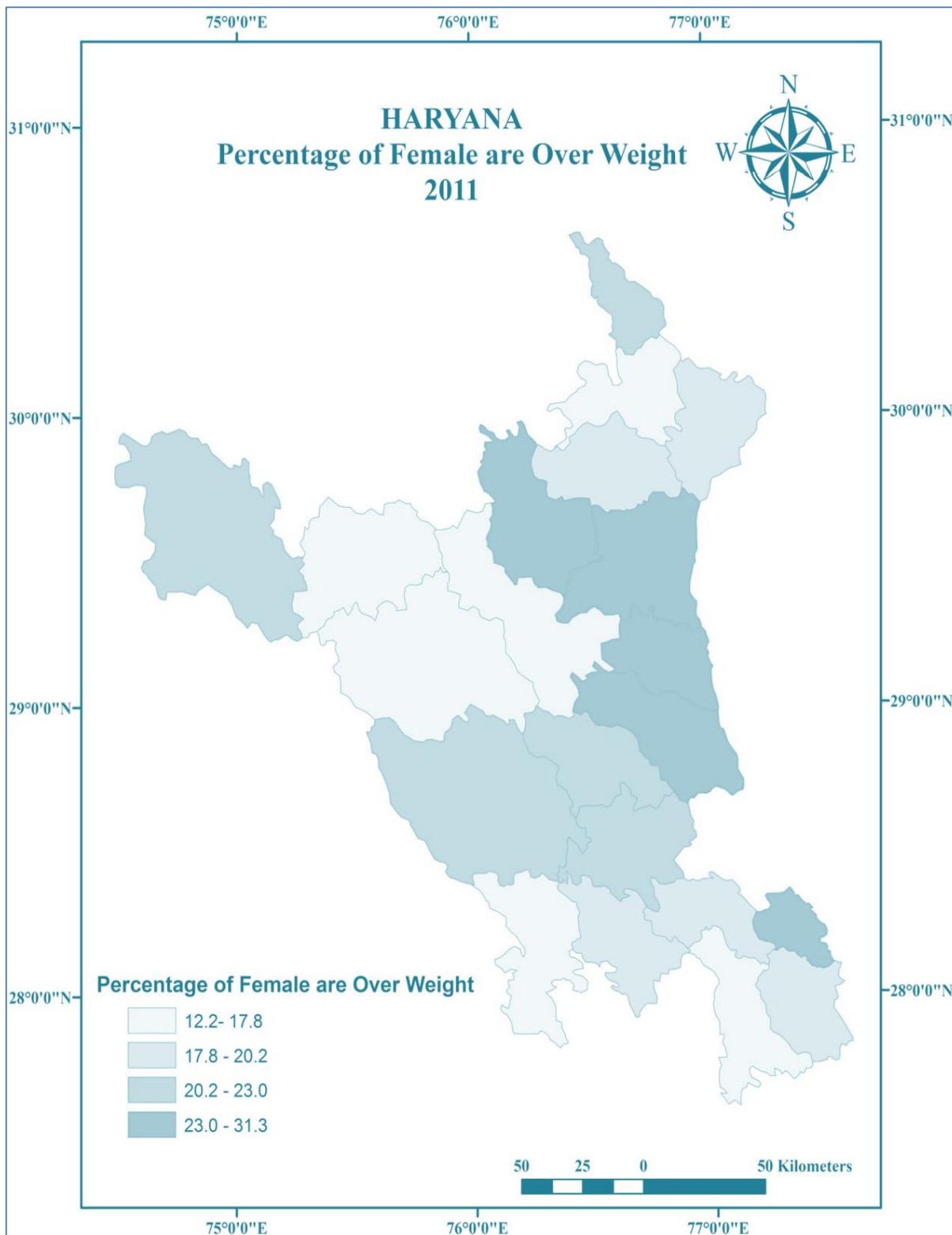












**CORRELATION:**

Electricity availability is positively and significantly associated with sanitation facility, clean fuel, and iodized salt and emphatically connected with safe drinking water. Overweight of ladies anyway contrarily connected with hypertension among ladies. If there should arise an occurrence of drinking water, it was emphatically connected with sanitation and iodized salt and adversely connected with hypertension among ladies and clean fuel. On account of sanitation office, it decidedly connected with overweight, clean fuel

anyway emphatically and essentially related with iodized salt however contrarily associated with hypertension among ladies in Haryana. Clean fuel is decidedly connected with overweight ladies and emphatically altogether related with iodized salt anyway adversely connected with hypertension among ladies. Iodized salt is decidedly connected with an overweight of ladies anyway contrarily connected with hypertension among ladies. Overweight of ladies is adversely and altogether connected with (- .699\*\*) hypertension among ladies in Haryana.

TABLE: 1 CORRELATION MATRIX

	VAR01	VAR02	VAR03	VAR04	VAR05	VAR06	VAR07
VAR01	1	0.313	.813**	.551**	.909**	0.413	-0.115
VAR02		1	0.334	-0.096	0.373	0.01	-0.061
VAR03			1	0.386	.761**	0.305	-0.122
VAR04				1	.570**	0.306	-0.171
VAR05					1	0.399	-0.134
VAR06						1	-.669**
VAR07							1

Correlation is significant at the 0.01 level (2-tailed)

TABLE 2: Hypertension and Blood Sugar among Women of Haryana and Their Correlates

S.no.	District	Electricity	Water	Sanitation	Clean fuel	Iodized Salt	Over Weight	Hypertension
1	Ambala	99.8	99.7	89.9	67.8	96	12.7	8.9
2	Bhiwani	99.2	89.8	82.6	33.4	91.1	22.1	7.4
3	Faridabad	99.2	51.1	78	82.6	91.8	23.7	8.5
4	Fatehabad	99.8	99.8	87.5	39.1	96.7	15.1	13.1
5	Gurgaon	99.8	97.9	66.3	82	94.8	20.2	6.1
6	Hisar	99	93.9	84.5	38.8	91.4	17.8	9.1
7	Jhajjar	99	93	86.4	43.9	93.1	21.6	6.5
8	Jind	99.5	91.4	84.6	36.8	94.6	17.5	5.6
9	Kaithal	99.9	98.8	78	41.1	89.6	25.3	7.2
10	Karnal	99.5	100	87.5	54.7	94.4	26.3	4.6
11	Kurukshetra	99.9	99.8	86	59.1	95.1	19.6	8.5
12	Mahendragarh	98.6	96	74.3	32.9	89.9	14.4	10.4

13	Mewat	88.5	78.9	46.7	17.2	67.5	12.2	8.2
14	Palwal	93.2	93.6	66.4	30.6	83	19.1	8.5
15	Panchkula	99.6	99.5	86.9	77.3	98.3	22.9	8.4
16	Panipat	100	99.7	91	63.6	98.2	25.8	3.5
17	Rewari	98.6	93.5	69.7	39.1	97.1	20.1	10
18	Rohtak	99.1	98.3	77	45.8	98.6	21.6	6
19	Sirsa	98.9	98.2	79.5	41.8	88.3	23	7.7
20	Sonipat	99.7	94.7	79.9	48.4	97.8	31.3	3.8
21	Yamunanagar	99.9	99.7	80.2	61.6	96.7	19	10.1

Source: National Family Health Survey, 2015-16.

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