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# Over Weight and Hypertension among Women of Haryana and their Correlates: A Scientific and Geographical Study

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**Abstract:** In this article, an attempt has made to analyze the spatial variations in overweight and hypertension among women in Haryana. We take different variables like percentage of electricity availability, percentage of safe drinking water availability, percentage of sanitation availability, percentage of clean fuel availability, percentage of people use iodized salt, percentage of overweight female and percentage of female suffering from hypertension in all 21 districts of Haryana. These are the variables of quality of life and instruments of 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 the Hypertension among women in Haryana is significantly and negatively associated with overweight women. Nevertheless, the overweight females are positively associated with all amenities availability

**Keywords:** Overweight Female, Female Suffering From Hypertension, Spatial Pattern, Haryana.

## I. INTRODUCTION

### A. 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

### B. Data And Methodology

The study area of 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 present study taken from national family health surveys 2015-2016 and censuses of India 2011.

### C. Methodology

Electricity	Water	Sanitation	Clean fuel	Iodized Salt	Over Weight	Hypertension
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After collecting the data it is arranged, tabulated, calculated and analysed. 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, moderate high, moderate low and low). Correlations between all these 7 variables have calculated with the help of SPSS16 software.

## II. RESULTS AND DISCUSSION

### A. Percentage of Electricity Availability

Haryana is equipped with well electricity to its all population. On an average the percentage of electricity availability in Haryana is 94.31% according to National Family Health Survey 2015-16. All the districts are well equipped with electricity facility except district Mewat, here the percentage of availability of electricity is lowest among all the districts.

In Mewat district the percentage of this is 88.5%. After this district the Palwal district has shown the bad performance of electricity availability, here the percentage of electricity availability is 93.2%. Panipat district has cent percent availability of electricity.

Yamunanagar, Kurukshetra, Kaithal, Fatehbad, Ambala and Gurgaon districts are also performed well in this context. In these districts more than 93% population is filled with electricity supply.

### B. Percentage of Safe Drinking Water Availability

Haryana has shown a great improvement in the supply of safe drinking water. 93.32% population of Haryana is furnished with safe drinking water. But this availability is different in all the districts of the state. If we see on the above map which is showing the percentage of safe drinking water availability then we find that there are some districts like Karnal, Kurukshetra, Yamunanagar, Panipat and Fatehbad are having more than 99.7% safe drinking water availability.

It is very interesting to see that Karnal is the district which is capable to supply safe drinking water to its all 100% population. On the other hand the performance is poor in some districts like Faridabad, Mewat, Jind, Jhajjar and Bhawani. Here the percentage of safe drinking water availability is very low. The poorest condition is of district Faridabad where this percentage is 51.1%.

#### *D. Percentage of Sanitation Availability*

In the sanitation point of view, the performance of Haryana is average. It is average in the availability of sanitation. The total percentage of Haryana for sanitation availability is 79.15%, which is not bad. However, this availability varies in all the districts. There have no any district where the availability percentage of sanitation is more than 90%. The highest percentage recorded in district Ambala where this percentage is 89.9%, followed by district Karnal with 87.5% then Fatehbad and Panchkula are 87.5% and 86.9% respectively.

The above districts are in good condition but there is also another face of this availability, which is not good. There are some districts, which have very less percentage of sanitation availability, these districts are Mewat 46.7%, Gurgaon 66.3%, Palwal 66.4% and Rewari 69.7%.

#### *E. Percentage of Clean Fuel Availability*

Availability of clean fuel in Haryana is not in fine situation. The total availability percentage of clean fuel in Haryana is 49.4%. In district Faridabad (82.6%), Gurgaon (82%), Panchkula (77.3%) and Ambala (67.8%) the condition of fuel availability is good. On the other side district Mewat (17.2%), Palwal (30.6%), Mahendergarh (32.9%) having the very bad conditions. In other districts like Jind, Jhajjar, Rewari, Fatehbad and Bhiwani the availability of clean fuel is also very less.

#### *F. Percentage of People Use Iodized Salt*

Iodine is beneficial for proper development and metabolism in human beings. In Haryana there are 92.5% people used iodized salt, but this percentage should be more. There is no any district in Haryana where the percentage of iodized salt using people is 99%.

The percentage is varies from 67.5% in Mewat district to 98.6% in Rohtak. The good percentage is also found in district Rewari 97.1 percentage, Panipat 98.2% and Panchkula 98.3%. on the other side here also Mewat is lowest with 67.5%. The other districts like Palwal, Sirsa, Kaithal has shown less percentage of iodized user people.

#### *G. Percentage of Overweight Female*

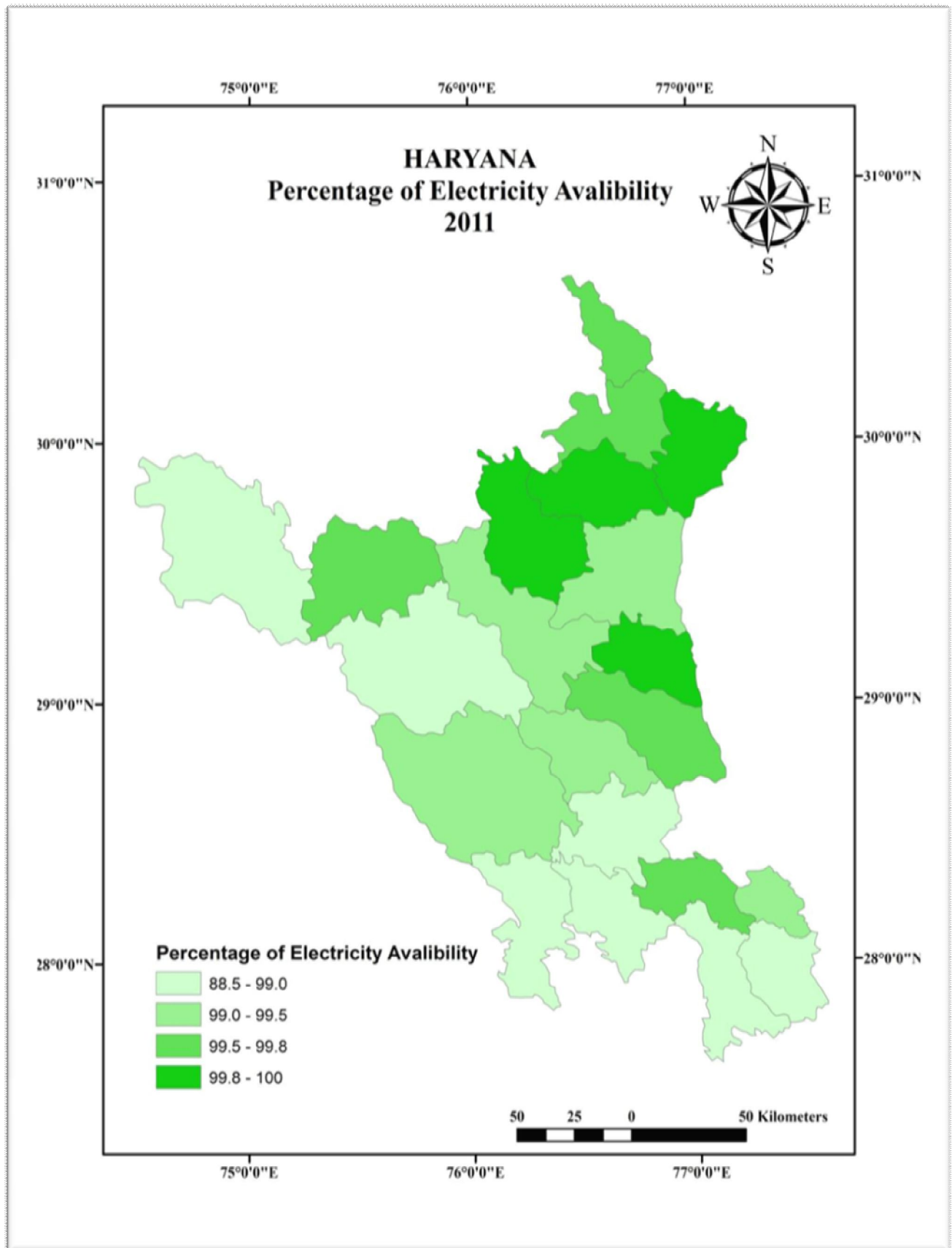
Overweight is a situation when our body fat increased to more than optimally healthy. It is a common thing when food supply is plentiful and lifestyle is sedentary. In Haryana, the overweight female percentage is 19.77%. This is not a good sign because it gives birth to a lot of dangerous disease. In the districts of Haryana, this percentage also varies from urban to rural areas.

The maximum percentage of overweight female overweight is founded in Sonapat District. Here 31.3% females are overweight. Kaithal 25.3%, Karnal 26.3%, Panipat 25.8% and Faridabad districts also recorded high percentage of overweight female population. On the other hand districts of Mewat 12.2%, Ambala 12.7%, Fatehbad 15.1% and Mahendergarh 14.4% recorded with lowest percentage of overweight female population.

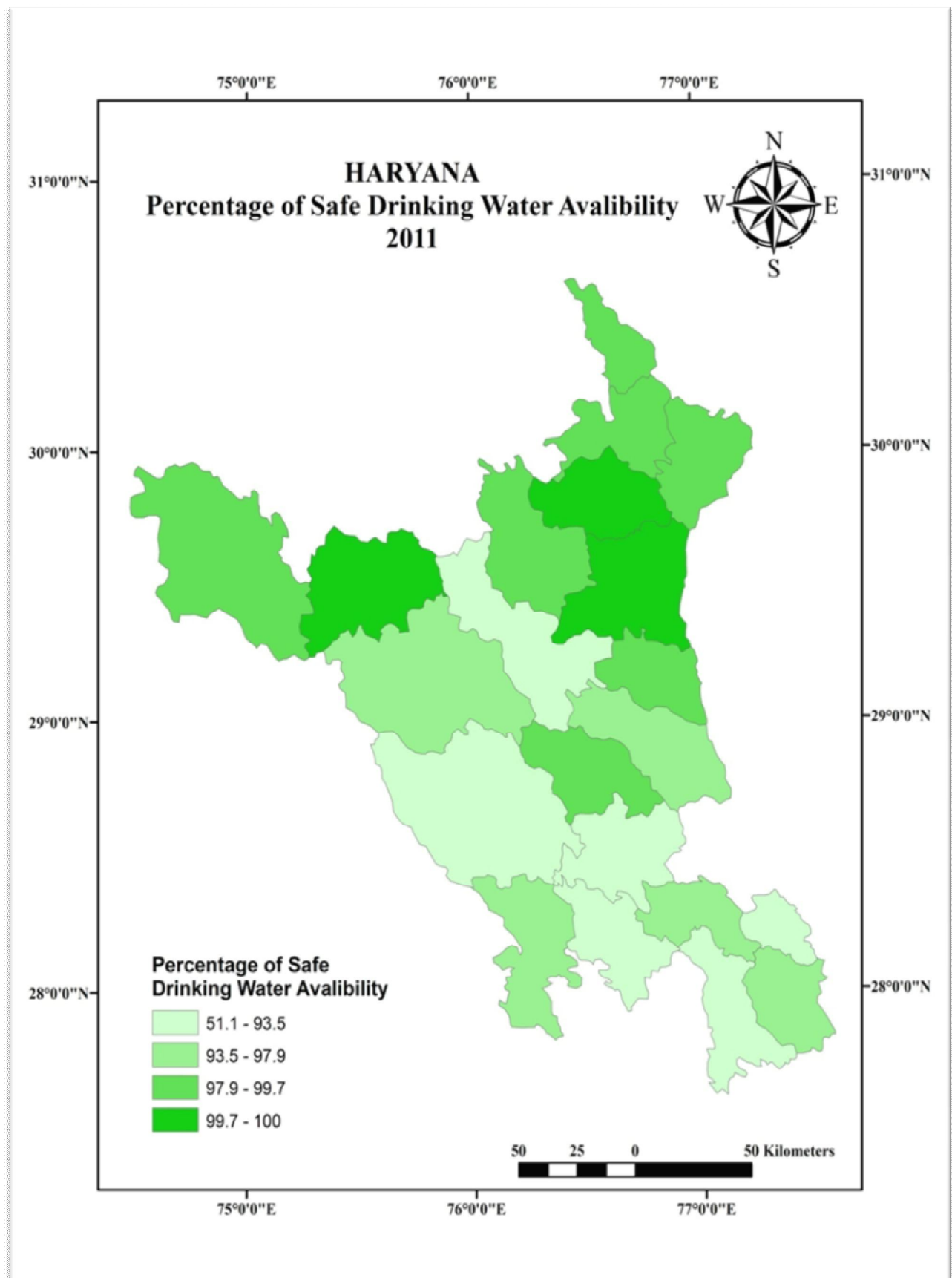
#### *H. Percentage of Female Suffering from Hypertension*

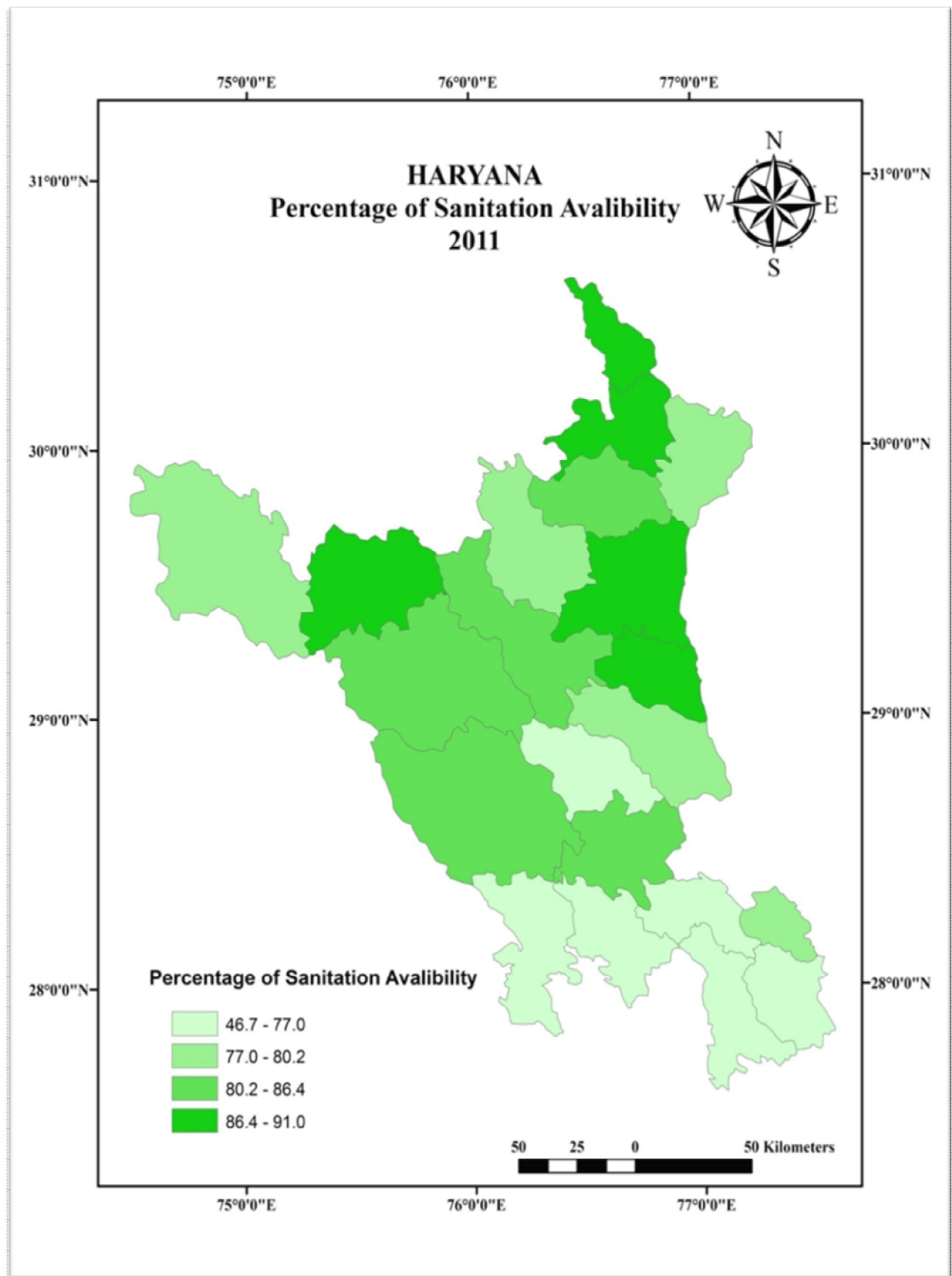
Hypertension commonly known as high blood pressure. The blood pressure in arteries of our body diligently raises high in a condition. It is happened only because of lifestyle and genetic factors. Females are prone to hypertension because of their lifestyle. In the context of Haryana, the 7.70% female population is suffering from the problem of hypertension.

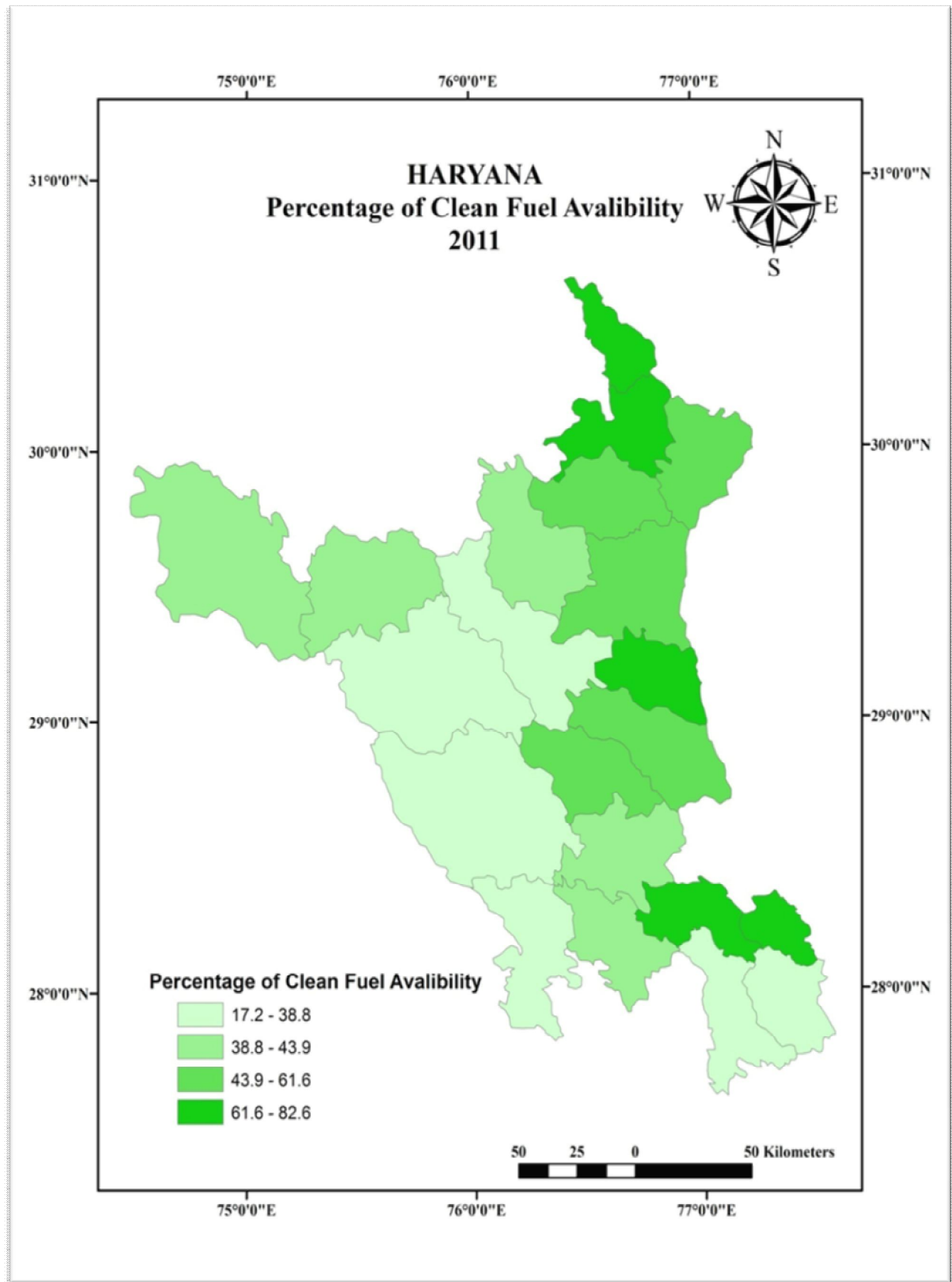
The maximum percentage of women who are suffering from this problem is recorded in Fatehbad district where this percentage is 13.1%. The minimum percentage recorded in Sonapat district with 3.8%. in Mahendergarh and Yamunanagar this percentage is 10.4% and 10.1% respectively. The Karnal 4.6% and Jind 5.6% has low percentage of female population suffered from hypertension.

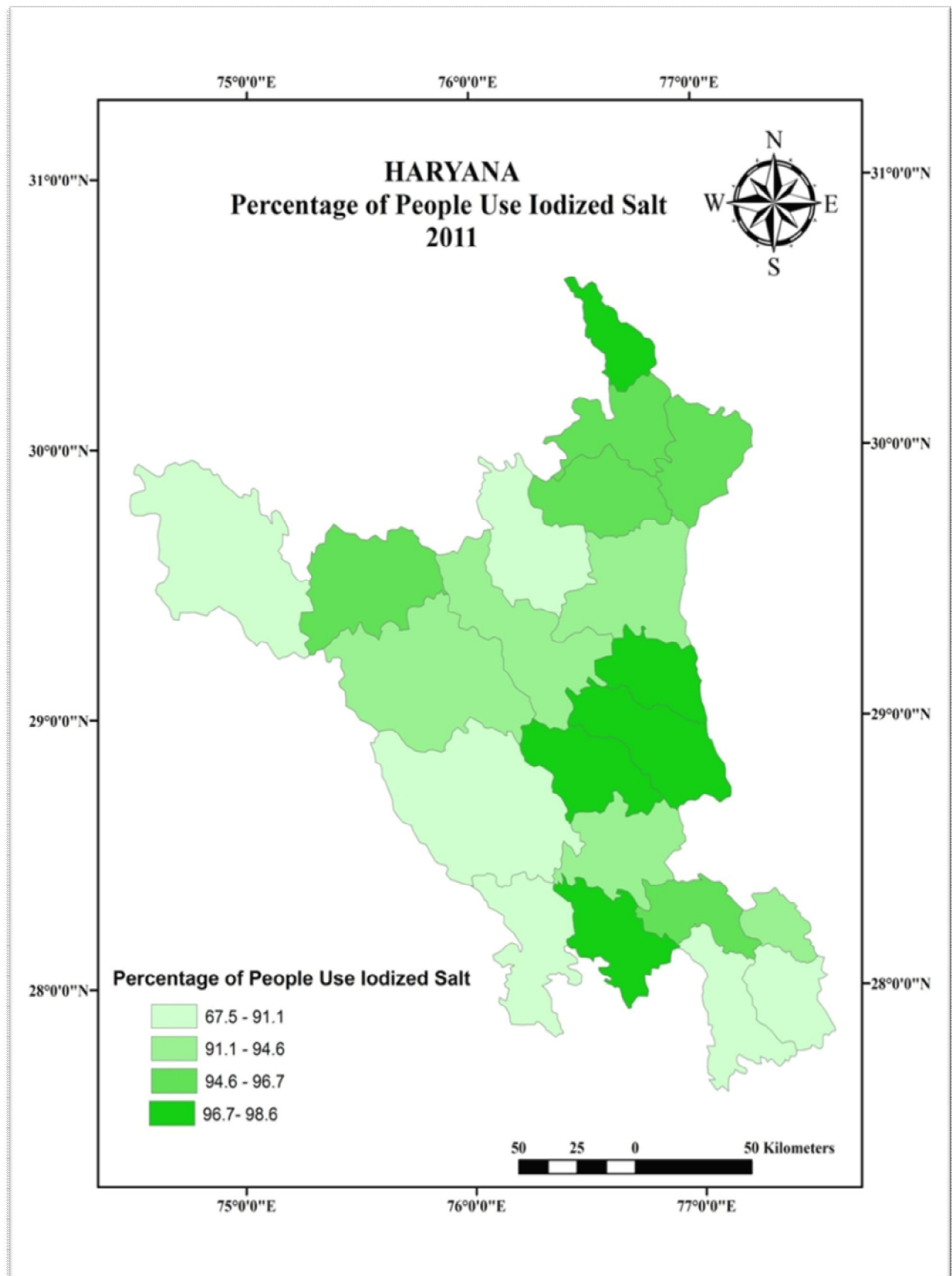




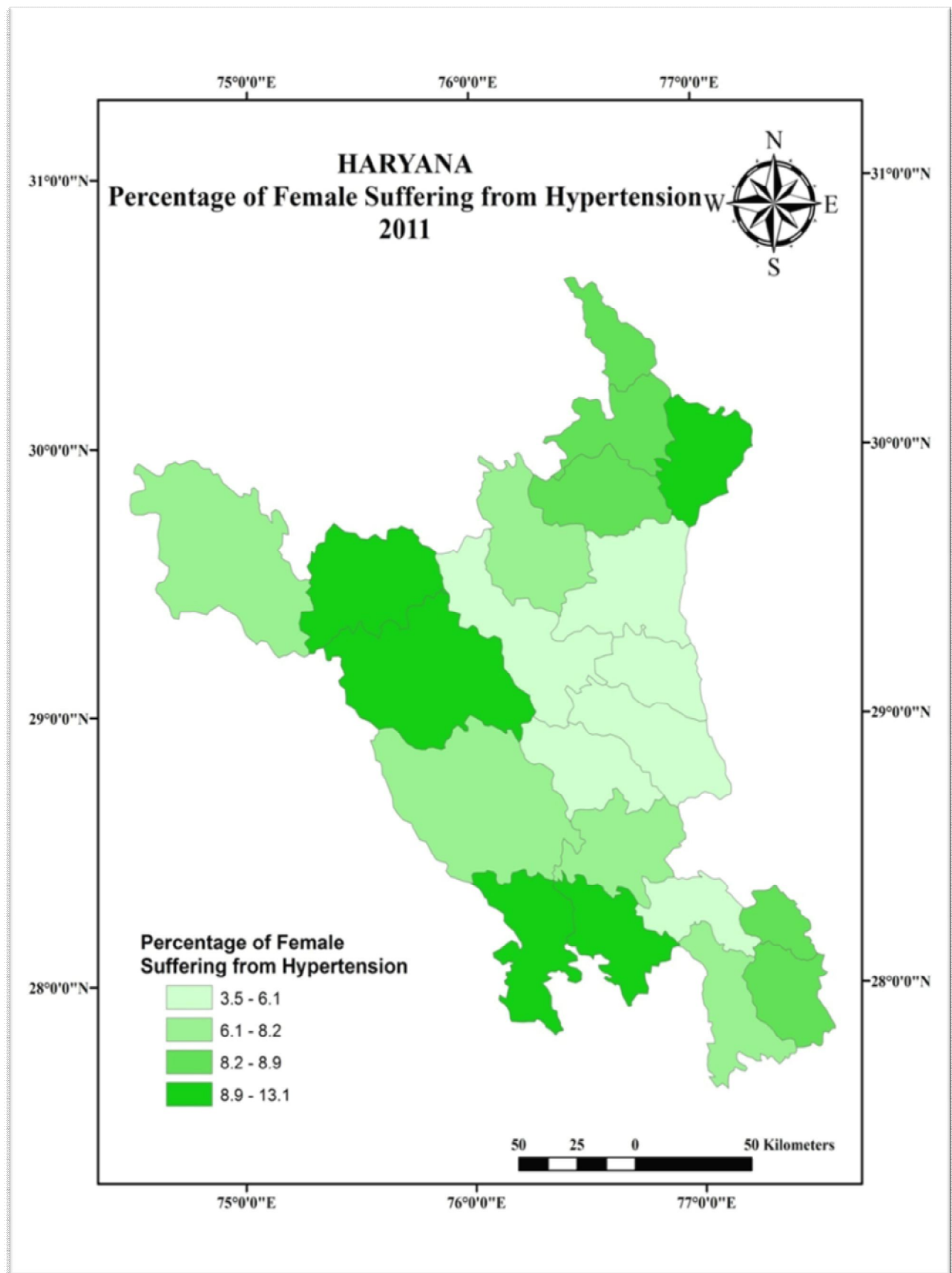


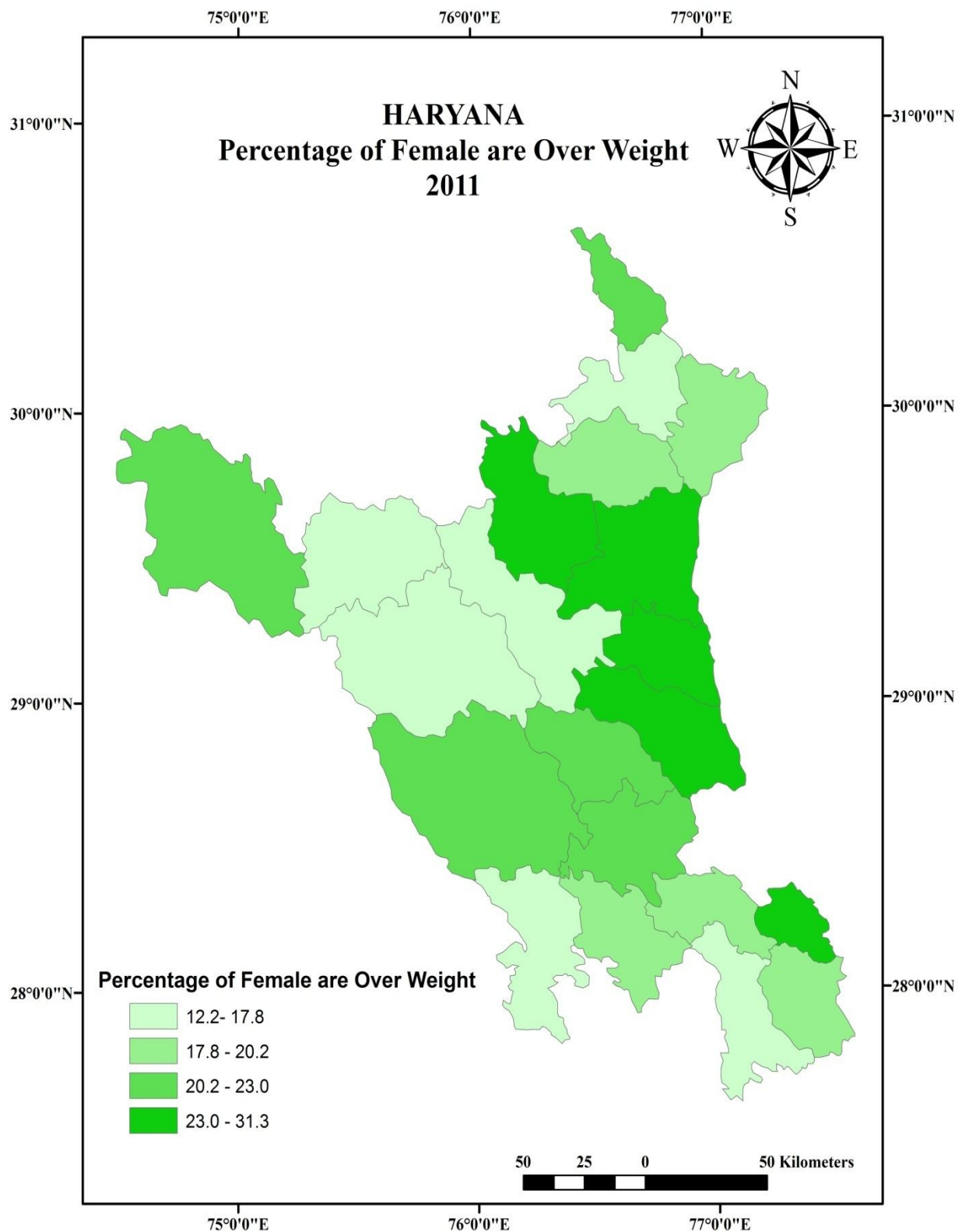












### III. CORRELATION

Electricity availability is positively and significantly associated with sanitation facility, clean fuel, and iodized salt and positively associated with safe drinking water. Overweight of women however negatively associated with hypertension among women.

In case of drinking water it was positively associated with sanitation and iodized salt and negatively associated with hypertension among women and clean fuel.

In case of sanitation facility, it positively correlated with overweight, clean fuel however positively and significantly correlated with iodized salt but negatively correlated with hypertension among women in Haryana.

Clean fuel is positively associated with overweight women and positively significantly correlated with iodized salt however negatively associated with hypertension among women.

Iodized salt is positively associated with overweight of women however negatively associated with hypertension among women.

Overweight of women is negatively and significantly associated with (-.699\*\*) hypertension among women in Haryana.

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)

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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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